Vol. XII APRIL, 1937 No. 3

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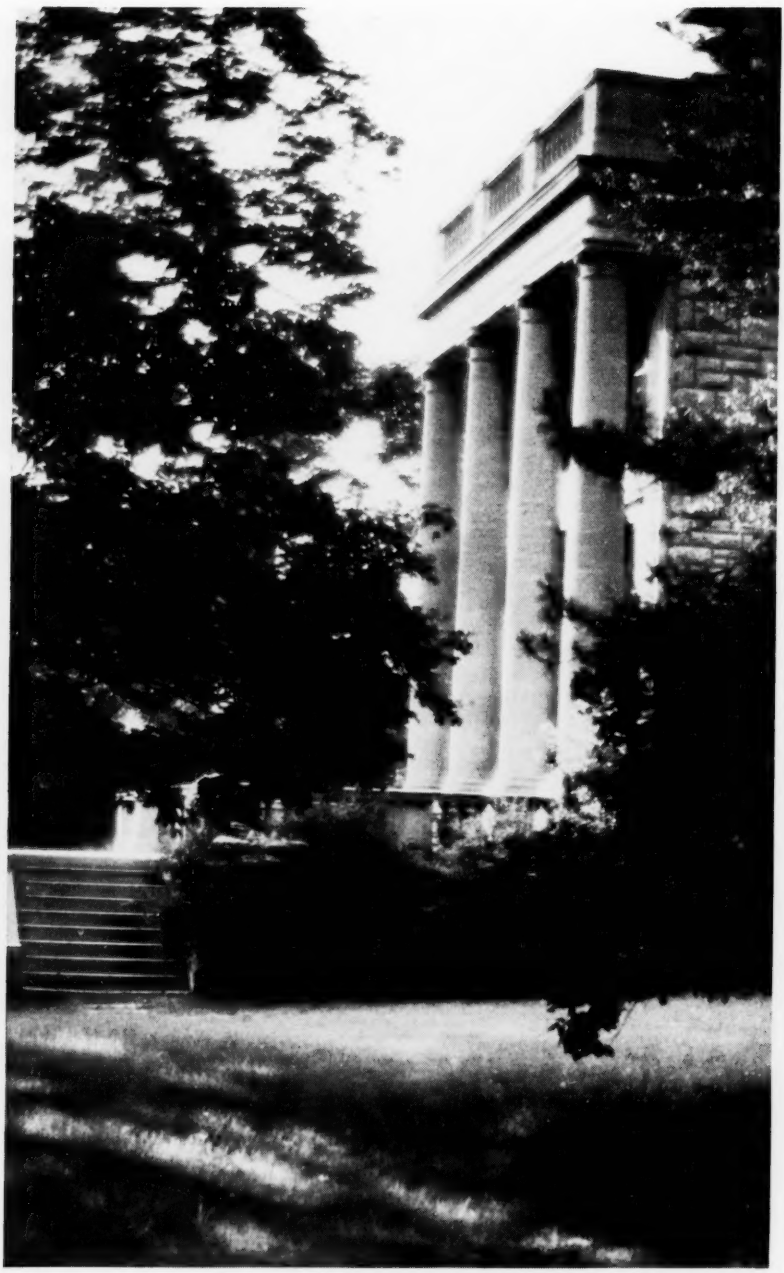
Issued Quarterly: October, January, April, July
Subscription Price $3.00
Publication Office: 450 Ahnaip Street, Menasha, Wis.
Editorial Office: Office of The Registrar, Temple University
Broad St., and Montgomery Ave., Philadelphia, Pa.

Entered as second-class matter at Menasha, Wisconsin, under the Act of August 24, 1912.



Entrance and Columns, Administration Building

UNIVERSITY OF KANSAS CITY

Bulletin *of*
The American Association *of*
Collegiate Registrars

April
1937

Vol. XII
No. 3

The Relationship between Certain Factors and Scholastic Success in the University of Minnesota College of Education

Dale O. Patterson

The central problem of this investigation may be stated in the form of the question: Using the measures which are now being made on all students before they enter the University of Minnesota College of Education, with what degree of effectiveness may the admission authorities expect to forecast the ultimate scholastic achievement of those accepted for admission? From a slightly different point of view the question might be put: On the basis of quantitative information about applicants for admission, to which the college has access at the time of entrance, could effective selection be made of those individuals who would later succeed in their scholastic work? By "effective" selection is meant the acceptance of students who will later succeed in college and the rejection of those who are destined to fail or make unsatisfactory scholastic records should they be admitted.

Evidence from two directions may be cited to support the thesis that admission officials of the College of Education might well adopt policies restricting the number of students accepted for en-

trance. In the first place, there is an over supply of teachers; and secondly, the mortality rate among students is high.

For example, records in the Placement Bureau of the College of Education for the three school years 1932–1933 to 1934–1935, inclusive, show that only 576 (or approximately 43 per cent) of the 1,343 graduates of that college had been placed in full time teaching positions by January first following graduation. Allowing for those who continued their professional training in the graduate school, women who married, and a few not accounted for, 593 (or about 44 per cent) of the total were either without jobs altogether or were employed only part-time on relief work or teaching. Admitting that the depression circumstances during the period contributed somewhat to this rather dark employment situation, there can be little doubt that the problem is a continuing one and will have to be faced even in normal times. There is no reason to suppose that the situation just described for Minnesota was materially different from that existing in the country as a whole.

The second line of evidence supporting the argument that selective admission policies are needed in the College of Education is found in the mortality rate among students who were admitted to the institution. Considering only those students who entered the College of Education as juniors with two years of pre-education work of college grade, approximately one-third (174 out of a total of 538) dropped out of college before completing the work for a degree.

If the best possible use be made of the available quantitative information, such as age, high school scholarship, pre-education college scholarship, intelligence and achievement test scores, and of units of high school credits in various subject matter fields, would it be possible to select accurately those who would later succeed in the College of Education if admitted?

Methods and Scope of the Study: Relationship between each of the factors studied and scholastic success in the College of Education is expressed as a product moment coefficient of correlation. The multiple coefficient of correlation is employed to express relationship between the various groups of two or more factors and college marks. Rectilinear regression equations are used to predict marks of students, and these predicted standings are compared with the actual scholarship in order to determine the efficiency with which scholastic rank can be foretold from the measures at hand.

The sample consists of 538 students who entered the University

of Minnesota College of Education as juniors in 1931, 1932, and 1933. The records of these students on all of the variables included for study were taken principally from the Office of the Registrar, the College of Education, and the University Testing Bureau. Incomplete records for some of the cases required that the information be secured directly from high schools or colleges from which the students in question came. Of the 538 students in the sample, 309 entered from the University of Minnesota College of Science, Literature and the Arts, while 229 transferred to the college from other institutions.

In the description of the variables which follows, each of the factors is identified by number. It will be noted that variable number one is the criterion of college success. The remaining variables in the list represent the predictive factors employed in this investigation.

1. *Honor Point Ratio in the College of Education:* Scholastic standing in the College of Education is expressed as an honor point ratio. For each quarter hour of credit carrying "A" as the mark, the student receives 3 honor points, a quarter hour of "B" counts 2 honor points; a "C" mark means 1 honor point per quarter hour; a "D" is rewarded with 0 honor points, and a mark of "F" carries −1 honor point per quarter hour. The honor point ratio is the quotient of the total honor points earned divided by the number of quarter hours for which the student receives a mark during his stay in the college. The records of "E" (condition) and "I" (incomplete) are omitted from the computations. Students remaining less than one quarter in residence are not included.

2. *High School Average:* All high school marks are expressed on a percentage basis, with 75 being the lowest passing mark. Five point grading scales are transformed into per cent marks as follows: A=96; B=90; C=84; D=78; F=72. Marks from high schools with 65 as lowest passing mark are subjected to the transformation, $7y=5x+200$; where x represents the average mark from the given high school and y is the transformed mark used in the study. High school systems with 70 as the lowest passing mark are transformed by means of the equation, $6y=5x+100$. Here again x represents marks received in high school and y is the expression of the equivalent mark under the 75–100 system.

3. *High School Rank:* Every spring High School principals in the State of Minnesota furnish the University with lists of their graduat-

ing classes ranked from highest to lowest according to scholarship during the three and one-half or four year course. The ranking is transformed into percentile ranks by the admission officials of the University. In this study the percentile ranks are expressed as standard scores, assuming a normal distribution of the variable in question.

4. *College Aptitude Test:* This College Aptitude Test is an English vocabulary test of 480 words prepared by Donald G. Paterson and L. E. Drake for the Minnesota Association of Colleges. The authors report a reliability coefficient of .95 for the test.[1] The raw scores are used in this study, rather than the percentile ranks which are recorded in the testing Bureau.

5. *Miller Analogies Test:* The Miller Analogies Test is an intelligence test made up of one hundred analogies scaled to a difficulty suitable for college and graduate levels of ability. The test takes forty minutes to administer and is given to all who enter the University of Minnesota College of Education. Reliability coefficients of around .90 have been found for this test when administered to groups of juniors and seniors in the college. The raw scores are used in this investigation.

6. *The Iowa English Test:* Form ET–1 of the Iowa English Test was the one used in the College of Education during the period under investigation. This test takes forty minutes to administer and consists of four parts: Part I, a spelling test; Part II, a test of punctuation and sentence structure; Part III, a grammar and English usage test; and Part IV, a measure of the students ability to distinguish between clear, emphatic sentences and those which are weak, confused and ridiculous. The reliability coefficient, obtained for the examination from one hundred cases, was reported by Stoddard and Harrisson to be .90. Its correlation with first semester marks at the University of Iowa, as reported by the same authors, was .54.[2]

7. *Minnesota Reading Examination:* This test is administered to all students at the time of their entrance to the College of Education. It is made up of two parts—a vocabulary test, and a test of

[1] Donald G. Paterson and L. E. Drake "Reliability Analysis of the 1929 Edition of the College Ability Tests Prepared for the Minnesota Association of Colleges." Unpublished Mimeographed Manuscript, University of Minnesota Testing Bureau, 1929.

[2] George D. Stoddard and Harry P. Harrison. "A Study of Placement Examinations," Iowa City, *University of Iowa Studies in Education*, Vol. IV, No. 7, 1928.

reading comprehension. The reliability of each of the parts and of the whole examination, as reported by Eurich, runs as follows: Part I, .91; Part II, .78; total test, .87. These coefficients were obtained from the performance of 216 College of Education juniors and seniors.[3]

8. *Average Scholarship in High School English.*
9. *Average Scholarship in High School Mathematics.*
10. *Average Scholarship in High School Social Sciences.*
11. *Average Scholarship in High School Foreign Languages.*
12. *Average Scholarship in High School Natural Sciences.*

The average marks in the high school subject-matter fields are expressed in per cent averages in the same way as the total high school average discussed in a preceding paragraph.

13. *Number of Semester Units in High School Social Sciences.*
14. *Number of Semester Units in High School Foreign Languages.*
15. *Number of Semester Units in High School Natural Sciences.*

Because of the fact that almost all students entered with eight semester units in high school English, this variable was not correlated with College success. The number of units of high school mathematics was not used for a similar reason.

16. *Age at Entrance to the College of Education.* The age is expressed to the nearest month.

17. *Average Scholarship in Pre-education.* Honor point ratios of students coming from the University of Minnesota College of Science, Literature and the Arts, are taken at their face value, while scholastic averages of transfer students are subjected to the following transformations: $y=1.03+[(x-a)/(3-a)]$ (1.97), for a student whose average was above that of his own college; and $y=1.03-[(a-x)/(a+1)]$ (2.03), for a student below the average of his college. In both equations above, y is the corrected honor point average used in this study; x is the student's honor point average from his own college; a is the average of all marks given in the student's own college; and 1.03 is the average of all marks given in the University of Minnesota Arts College.

The Findings: In Table I are listed the zero order coefficients between the various predictive factors and the College of Education success. Because of the fact that for a majority of the 229 transfer

[3] Eurich, Alvin C., *The Reading Abilities of College Students*, Minneapolis, The University Press, 1931, p. 23.

students no measure exists on high school rank, College Aptitude Test, and Iowa English Test, there are these gaps in the table.

A glance at the data in Table I reveals that the number of high school units in various subject fields does not offer any help in the prediction of college success. The coefficients of correlation are practically zero. The same observation holds for the age at entrance. Pre-education average, Miller Analogies Test score, and high school scholarship seem to offer the best promise for predictive purposes. It should be noted that the rank in graduating class furnishes a lower coefficient than does high school average. The difference is not great, but furnishes some basis for concluding that high school marks, even though they do come from a large number of high schools with a wide variety of standards and systems of marking, furnish as dependable a basis for predicting college success as does rank in class.

TABLE I

ZERO ORDER COEFFICIENTS OF CORRELATION BETWEEN THE PREDICTIVE FACTORS OF THE STUDY AND COLLEGE OF EDUCATION HONOR POINT RATIO FOR THE TWO GROUPS SEPARATELY AND FOR THE TOTAL GROUP

Variable	309 Minnesota S. L. A.	229 Transfer	538 Total Group
High School Average	.316	.513	.448
High School Rank	.268	—	—
College Aptitude Test	.248	—	—
Miller Analogies Test	.404	.469	.466
Iowa English Test	.175	—	—
Minnesota Reading Test	.282	.376	.361
H. S. English Average	.251	.434	.372
H. S. Mathematics Average	.229	.422	.335
H. S. Social Sciences Average	.352	.443	.431
H. S. Units Social Sciences	.028	−.079	.004
H. S. Units Language	−.049	.070	.061
H. S. Units Sciences	.062	.111	.029
H. S. Languages Average	.252	.457	.378
H. S. Sciences Average	.321	.411	.366
Age at Entrance	−.027	−.100	−.124
Pre-Educational College Average	.652	.557	.549

From a large number of multiple coefficients of correlation involving combinations of two, three, four, and five predictive factors, the highest are presented in Table II.

TABLE II

RELATIONSHIP BETWEEN VARIOUS COMBINATIONS OF VARIABLES AND SCHOLARSHIP IN THE COLLEGE OF EDUCATION FOR THE COMPLETE GROUP OF 538 CASES

Combinations of Variables	Multiple Coefficient	Standard Error of Estimate
Average Pre-Educational College Mark Miller Analogies Test	.597	.441
Average Pre-Educational College Mark Miller Analogies Test High School Average	.613	.435
Average Pre-Educational College Mark Miller Analogies Test H. S. Social Science Average	.616	.433
Average Pre-Educational College Mark Miller Analogies Test High School Average Minnesota Reading Test	.613	.435
Average Pre-Educational College Mark Miller Analogies Test H. S. Social Science Average H. S. English Average	.616	.433
Average Pre-Educational College Mark Miller Analogies Test H. S. Social Science Average H. S. English Average Minnesota Reading Test	.639	.423

Note—All of the possible two variable multiple coefficients of correlation were computed, as were many higher order coefficients, but only the highest ones are reported here.

Multiple coefficients of correlation were also computed for the two separate groups of 309 Minnesota Arts students and 229 transfer students, but are not presented in this paper since the results are so nearly the same as those here reported for the 538 cases. The essential fact in connection with the data of Table II is that, with the best possible selection of the factors, multiple correlation coefficients range from .60 to .64. Predictions based on such degrees of relationship are subject to errors approximately .8 as great as those which would be made should the prediction be based on factors with zero correlation with the criterion. In order to determine more specifically the effectiveness of predictions based on combinations of factors yielding the highest multiple correlation coefficients,

rectilinear regression equations were employed to predict the scholarship of each of the 538 students in the study.[4] These predicted marks were compared with the actual college scholarship of these students. The data of Tables III and IV are so arranged that

TABLE III

ACCURACY OF PREDICTING COLLEGE OF EDUCATION HONOR POINT RATIO OF 538 ACADEMIC MAJORS, USING PRE-EDUCATION AVERAGE, MILLER ANALOGIES TEST, AND HIGH SCHOOL SOCIAL SCIENCE AVERAGE AS THE PREDICTIVE VARIABLES IN A MULTIPLE REGRESSION EQUATION

		Predicted					
		1–7 Percentile	8–31 Percentile	32–69 Percentile	70–93 Percentile	94–100 Percentile	Total
Actual	94–100 Percentile			2 (1.0)	22 (16.9)	13 (35.1)	37
	70–93 Percentile		5 (3.9)	51 (25.0)	58 (44.6)	16 (43.2)	130
	32–69 Percentile	11 (29.7)	56 (43.1)	94 (46.1)	36 (27.7)	7 (18.9)	204
	8–31 Percentile	15 (40.5)	49 (37.7)	51 (25.0)	14 (10.8)	1 (2.7)	130
	1–7 Percentile	11 (29.7)	20 (15.4)	6 (2.9)			37
	Total	37	130	204	130	37	538

	By prediction	By chance
Per cent correctly placed =	41.82	26.94
Per cent displaced 1 step =	49.63	43.20
Per cent displaced 2 steps =	8.37	22.16
Per cent displaced 3 steps =	0.18	6.72
Per cent displaced 4 steps =	0.00	0.98

the comparison of the predicted and actual honor point ratios is facilitated. In this instance pre-educational average, Miller Analogies Test score, and high school social science average formed the combination of three predictive factors used.

Table III represents the results of ranking the predicted and actual honor point ratios of the 538 students into five categories on

[4] The relationships involved are linear as shown by application of the test of non-linearity outlined by L. H. C. Tippett, *The Methods of Statistics*, pp. 150–154. London: Williams and Norgate, 1931.

each scale and arranging these in the form of a two-way distribution. The highest 7 per cent of the marks on both scales are headed "94–100 percentile"; the next 24 per cent, "70–93 percentile"; the middle 38 per cent "32–69 percentile"; the next 24 per cent, "8–31 percentile"; and the lowest 7 per cent are designated "1–7 percentile." From this tabulation it will be noted that 11 (29.7 per cent) of the 37 cases which were predicted to fall among the lowest 7 per cent of the total group actually performed as predicted. However, the same number (11) of these 37 actually attained averages in the middle category. Of the 37 who actually scored among the lowest 7 per cent of the total group, 6 were predicted in the middle category and 20 in the next to the lowest group.

Considering the predictions as a whole, 41.8 per cent were predicted correctly 49.6 per cent earned marks one division removed from that predicted, and 8.6 earned honor point averages two or more divisions removed from those predicted from the regression equation. Though this prediction is superior to that which would be possible by pure chance, individual prediction is still too inaccurate for sole dependence to be placed upon it in accepting or rejecting students wishing to enter the College of Education.

The bi-variate frequency distribution (Table IV) of actual and predicted college averages for the 538 cases illustrates quite clearly the inaccuracies which would result should regression equation results be employed to restrict enrolment in the College of Education. It will be observed that 55 of the 538 students earned averages below .875, and these can be considered as unsatisfactory records since a student must average 1.00 in order to be graduated. It is clear from Table IV that the predicted marks of these 55 students fail to indicate poor scholarship in any adequate way. For example, 29 of them were predicted to earn marks of 1.125 or above, which would place these students in the satisfactory class. Less than half of the poor scholarship students were selected by the predictive instrument to be low in scholarship.

If one were to try to select a point on the predicted scale (Table IV) below which even a majority of the students would fail to earn averages below 1.125, this point would have to be .625 and then only one student would be excluded from entrance.

From the foregoing analysis it would seem that no variable, or combination of variables, used in linear regression equations can be depended upon to select with a high degree of efficiency those stu-

dents who will not succeed in the College of Education. Coefficients of correlation between the predictive variable, and the criterion of success in the college would have to be considerably higher than those found in this study before accurate predictions could be made of future scholarship of individual students.

TABLE IV

BI-VARIATE FREQUENCY DISTRIBUTION OF ACTUAL COLLEGE OF EDUCATION HONOR POINT RATIOS AND HONOR POINT RATIOS PREDICTED FROM PRE-EDUCATION AVERAGE, MILLER ANALOGIES TEST, AND HIGH SCHOOL SOCIAL SCIENCE AVERAGE FOR 538 ACADEMIC MAJORS

Actual \ Predicted	.375	.625	.875	1.125	1.375	1.625	1.875	2.125	
2.875								2	2
2.625						3	2	1	6
2.375				1		6	5	4	16
2.125				1	5	14	20		40
1.875			1	8	15	23	13	4	64
1.625			3	15	30	21	7	1	77
1.375		2	11	37	38	16	12		116
1.125		5	24	36	25	19	4		113
.875		2	8	15	17	6	1		49
.625		1	4	12	3				20
.375		1	4	6	1	1			13
.125		1	7	3	1	1			13
−.125	1	2	2						5
−.375			1	1					2
−.625			1						1
−.875									
−1.125			1						1
	1	14	67	135	135	110	64	12	538

Summary of Results: The following enumerated list of statements briefly summarizes the findings of this study.

1. The two-year pre-education college average scholarship is more closely associated with College of Education honor point ratio than is any of the other variables included in this investigation. This coefficient was found to be about .55 with the total group of 538 students.

2. High school average and Miller Analogies Test scores come next to pre-education in closeness of association with the criterion. These variables furnish correlation coefficient of .47 and .45 respectively.

3. By combining the best predictive variables, multiple coefficients of correlation around .65 were obtained.

4. The number of units of high school credit in the various subject-matter fields show a coefficient of correlation substantially zero with College of Education success.

5. Age at entrance is slightly negatively correlated with College of Education scholarship, but the relationship is too low to offer any aid in prediction.

6. Predictions of scholarship for the 538 cases, based on a linear regression equation in which pre-education average, high school social science average, and Miller Analogies test score were employed as the predictive variables, gave very limited aid in the separation of students who were destined to succeed in college from those who later failed to maintain satisfactory averages.

Measurement of Some of the Outcomes of Laboratory Work in College Physics[1]

HENRY W. DUEL

The desirable outcomes claimed for the study of science are many and varied. A survey of the pertinent literature, however, reveals that, in general, these outcomes may be resolved into three fundamental ones, viz.:

(1) Knowledge of the fundamental facts and basic laws and principles underlying the science,

(2) The habit of scientific thinking and skill in the use of the scientific method of thought,

(3) Skill in the manipulation of laboratory apparatus and the use of laboratory techniques.

The first outcome can be quite satisfactorily measured by means of objective tests. The second outcome is difficult to measure; at the present time, no adequate tests for determining the extent to which the study of science develops the habit of scientific thinking in the student are available. The growth factor, emphasized by Griffith[2] suggests, however, that the problem may be approached from a somewhat different angle by measuring the effect of studying science upon the scientific aptitude of the students. Most of the abilities which constitute scientific aptitude, such as accuracy of observation, discrimination of values in selecting and arranging experimental data, accuracy of interpretation, ability to reason in unfamiliar situations, caution and thoroughness, suspended judgment, etc., are fundamental essentials in scientific thinking.[3] According to Griffith's[4] theory, if these abilities are developed and increased by the use of the scientific method in studying science or doing laboratory work, the student becomes a different kind of person and there will be transfer of the habit of scientific thinking to other

[1] Summary of Doctor's Dissertation, University of Minnesota, 1936.

[2] C. R. Griffith, *Introduction to Educational Psychology.* New York: Farnar and Rinehart, Inc., 1935, pp. 497, 499.

[3] E. R. Downing, *An Introduction to the Teaching of Science.* Chicago: The University of Chicago Press, 1925, pp. 57–58.

D. L. Zyve, *Explanatory Booklet Accompanying the Stanford Scientific Aptitude Test,* Stanford University, California: Stanford University Press, 1929, pp. 4–8.

[4] C. R. Griffith, loc. cit.

situations; on the other hand, if these abilities are not affected, the student does not become a different kind of person and there will be no transfer.

Whether or not we accept Griffith's theory of transfer, the development of a student's scientific aptitude as a result of studying science or working in a science laboratory would seem to indicate that he has acquired to some extent the habit of scientific thinking. On the contrary, the lack of such development would seem to indicate that the student has not acquired this habit.

Attempts have been made to measure the third group of outcomes directly by means of paper tests and performance tests. Horton[5] and Noll[6] both used paper tests for this purpose; Horton[7] used performance tests also. However, paper tests for measuring laboratory skills and techniques are of questionable validity. The time required to give performance tests of these outcomes prohibits their use in many investigations. This was the case in the present study.

The manipulative skills and knowledge of laboratory techniques acquired in a laboratory course may be measured indirectly by studying their effect upon achievement in subsequent laboratory courses in the same subject or similar subjects. Other things being equal it seems reasonable to expect students who have had a term of laboratory work to achieve more in subsequent laboratory courses in the same subject or similar subjects than students who have not had the first term of laboratory work. If students with previous laboratory training do achieve more, such achievement is an indication that they have acquired laboratory abilities which are of assistance to them in subsequent laboratory courses. If they do not achieve more, then three alternatives arise: First, they may not have gained the laboratory skills and techniques they are supposed to acquire; second, these skills and facility in the use of techniques may not transfer to any noticeable extent to subsequent laboratory courses; third, the students in subsequent laboratory courses who have not had the first term of laboratory work may acquire the necessary skills and techniques in such a short time that they are able to compete on practically equal terms with students who have had previous laboratory training.

If the first alternative is true and the students have not acquired

[5] Ralph E. Horton, *Measurable Outcomes of Individual Laboratory Work in High School Chemistry*. Teachers College, Contributions to Education No. 303.

[6] Victor H. Noll, *Laboratory Instruction in the Field of Inorganic Chemistry*. Doctor's Dissertation, University of Minnesota, 1930.

[7] Ralph E. Horton, loc. cit.

these laboratory abilities after having had a term of laboratory work, then this is evidence that the acquisition of laboratory skills and the ability to use laboratory techniques is not necessarily an outcome of laboratory work. With regard to the second alternative, if manipulative skills and the ability to use laboratory techniques do not transfer to any noticeable extent to situations as similar as those encountered in subsequent laboratory courses in the same or allied subjects, it would seem that these abilities are of very little value, especially outside of the laboratory. If the third alternative is true, and students can acquire the necessary laboratory skills and techniques in a comparatively short time at the beginning of a laboratory course, it would seem that, as far as techniques and skills are concerned, a considerable amount of the present laboratory work might be omitted without any serious damage to the students concerned. Finally, no matter which alternative may be the cause, if students who have had a term of laboratory work do not achieve more in subsequent laboratory courses in the same subject or allied subjects than students of equal ability who have not had the first term of laboratory work but have had equivalent training in other respects, this first term of laboratory training seems, to say the least, of doubtful value as far as manipulative skills and laboratory techniques are concerned.

Specifically, the purpose of the present investigation is to study the effect of laboratory work in college physics upon the fundamental outcomes claimed for the study of science. It is an attempt to compare groups of students in mechanics who did two hours of laboratory work per week for a period of one quarter with groups who did no laboratory work, with respect to:

(1) Knowledge and understanding of the fundamental facts and basic laws of mechanics,

(2) Development of scientific aptitude,

(3) Acquisition of manipulative skill and knowledge of laboratory techniques, in so far as these outcomes are reflected in achievement in subsequent laboratory courses in heat and electricity.

The study was made in the Physics Department at the University of Minnesota during the years 1930–34. Most of the experiment was carried on during the spring quarter, 1930, and the fall, winter, and spring quarters, 1930–31. The investigation was prolonged till the end of the winter quarter, 1934, in order to study the effect of laboratory work in mechanics upon achievement in subsequent laboratory courses in heat and electricity. The subject matter involved was con-

tained in a one-quarter course in the elements of mechanics offered to beginners in the physics department. Five hundred ninety-five students, most of whom were freshmen and sophomores, were used as subjects.

In the various comparisons the criteria used for matching individuals and equating groups were college ability, mathematical ability, initial knowledge of subject matter, and scientific aptitude.

In the comparisons with respect to the first outcome, some of the measures of achievement were based upon a scaled objective test of high reliability and validity;[8] others were measures of the types commonly used to determine achievement in mechanics, such as unscaled objective tests, quiz averages, final examinations, and final averages. In the comparisons with regard to the second outcome, the measure of development was the score gain on the Stanford Scientific Aptitude Test (SAT) over a period of one quarter; in those with respect to the third outcome, the measures of achievement were the final grades in the heat and electricity laboratory courses.

Most of the comparisons involving the first outcome were made between groups containing students at various levels of ability; a few comparisons were made between corresponding groups of higher, medium, and lower ability. These comparisons showed no statistically significant difference in mean achievement between the laboratory and no-laboratory groups; a few statistically reliable differences in variability were revealed, but, in every instance, the apparently high reliability seemed to be due to a spuriously low variability in one of the groups, caused by the small number of individuals in that group. The small size of the groups involved in the comparisons at the three different levels of ability justified tentative statements only; the results of these comparisons were in agreement with the results of the other comparisons; they indicated that, on the average, the laboratory and no-laboratory groups differed very little in achievement at any of the three levels of ability.

Similar comparisons were made with respect to the second outcome; most of these were between groups at various levels of scientific aptitude; a few comparisons were made between corresponding groups of higher, medium, and lower scientific aptitude.

[8] This test was a C-scale of thirty items. Correlating the scores on the odd-numbered questions with the scores on the even-numbered questions as earned by a group of 340 students, and applying the Spearman-Brown prophecy formula yielded a reliability coefficient of $.88 \pm .01$. Correlations between scores on this test and other measures of achievement of the kind ordinarily used in mechanics ranged from .50 to .91; they averaged .72.

In all of these comparisons, both the laboratory and no-laboratory groups made positive mean score gains on the SAT. The data contained twenty-four of these gains, eighteen of which were too small to be considered statistically reliable. This lack of reliability, however, seems to have been due to the comparatively small size of the groups, since the five largest groups used in these comparisons all made mean SAT score gains which were reliable. None of these comparisons showed a significant difference between the laboratory and no-laboratory groups with respect to score gains on the SAT, either in the means or in the standard deviations.

The comparisons involving the third outcome were based upon such crude measures of achievement that the usual statistical procedure seemed inadvisable. However, from an inspection of the results of these comparisons it seemed evident that there were no significant differences between the mechanics laboratory and no-laboratory groups with respect to achievement in the heat and electricity laboratory courses; it was obvious that, on the average, the students who did no laboratory work in mechanics achieved as much in these subsequent laboratory courses in heat and electricity as those students who did two hours of laboratory work per week in mechanics.

On the basis of the evidence the following conclusions seem reasonable:

(1) Students in mechanics who do no laboratory work will gain, on the average, as much knowledge and understanding of the fundamental facts and laws of mechanics as those students who do two hours of laboratory work per week for a period of one quarter; there will be very little difference between the two groups with respect to variability in achievement.

(2) The average student in mechanics, over a period of one quarter, will improve a small but statistically reliable amount in scientific aptitude, as this aptitude is measured by the Stanford Scientific Aptitude Test; two hours of laboratory work per week will have no significant effect upon the amount of this improvement.

(3) On the average, students who take the laboratory work in mechanics will not acquire sufficient manipulative skill and knowledge of laboratory techniques to affect noticeably their achievement in subsequent laboratory courses in heat and electricity, as this achievement is measured in this investigation.

English Grades and Student Mortality

J. D. Clark

Student mortality in American colleges has been accounted for on the basis of inadequate preparation for college training, economic handicaps, poor health, and disillusionment about the values of collegiate training in a practical world. Doubtless, sufficient evidence can be presented to support any or all the reasons for the present rate of mortality, which is shockingly high during the first two years of college life. But rigid and conclusive explanations, on a percentage basis, are definitely impossible and futile.

On the other hand, it appears reasonable to offer what seems to be an immediate cause underlying many of the present failures of students. It is nothing more nor less than the old problem of the students' inability to read and write effectively. Their lack of fitness in English can be isolated as a primary symptom of failure and the subsequent withdrawal from college ranks. It is, therefore, the purpose of this exposition to give the necessary facts to maintain this view.

The data, substantiating the position taken, were collected in a study made at North Carolina State College of the University of North Carolina during the first quarter of 1933–1934. The objective of the research was to establish the relationship existing between the mortality of students over a four-year period and the English placement grades received by these students at the beginning of their first quarter in college. The data concern the students who for the first time enroled in college in 1930–1931 and 1931–1932. These statistics on mortality refer specifically to the students' presence or absence from the college during the first quarter of the second, third, and fourth years.

The English grades, hereafter incorporated, are the averaged grades received by the Freshmen who took the English placement tests at the beginning of the fall terms of 1930–1931 and 1931–1932. The tests used were the Iowa Placement, English Training, Forms Y and X, for the years 1930–1931 and 1931–1932 respectively. These tests, which show a high and similar correlation, were scored on a 100-per cent basis. Each test has four parts: (1) Spelling, (2) Punctuation, (3) Grammar, and (4) Diction—each having a maximum score of 25. The English grades, recorded herein, are total

averaged grades made on the four parts of the tests. "Resident Students" were trained in the public schools of North Carolina, and "Non-Resident Students" were trained in other states.

A study of the general trend of mortality reveals the following symptoms: First, in Table I, the figures show that 52 per cent of the 490 students who enroled in 1930–1931 did not return at the be-

TABLE I

RESIDENT STUDENTS (No. = 490), 1930–1931

Years in College	Per Cent Mortality by Years	Averaged English Grades	Per Cent of Students by Distribution of English Grades		
			1–25	25.5–45	45.5–100
1	52	28	56	29	15
2	17	31	49	32	19
3	9	39	30	33	37
4	22	40	23	35	42
Average for all entering 1930–1931		31	44	31	25

TABLE II

RESIDENT STUDENTS (No. = 420), 1931–1932

Years in College	Per Cent Mortality by Years	Averaged English Grades	Per Cent of Students by Distribution of English Grades		
			1–25	25.5–45	45.5–100
1	44	30	50	31	19
2	14	31	39	42	19
3	10	31	40	43	17
4	32	39	36	25	39
Average for all entering 1931–1932		33	43	32	25

Note: Figures for the fourth year indicate percentage of students who returned to college with the hope of taking their degrees.

ginning of the second year. Their averaged English grade was 28, with 56 per cent of their general distribution of grades falling between 1 and 25, and an additional 29 per cent falling between 25.5 and 45. The mortality by the end of the second year was 17 per cent and the averaged English grade was 31. The distribution of grades included 49 per cent between 1 and 25, and 32 per cent between 25.5 and 45. By the end of the third year the percentage of mortality was only 9 per cent; and the English grade was 39, with 70 per cent of the

distribution of grades between 25.5 and 100. The students who returned for their fourth year had an English grade of 40, with 77 per cent of the distribution of grades between 25.5 and 100. The distribution of grades shows, furthermore, that 42 per cent of the fourth year men had grades of 45.5 to 100. Generally, it is observed that the percentage of English grades increased from the first to the fourth year, while that of the mortality was steadily decreasing. A comparison of the distribution of grades indicates that the percentage of grades between 1 and 25 gradually decreased from the first to the fourth year, whereas it increased from the first to the fourth year in the 45.5–100 bracket.

Taking the two extremes of the distribution of grades, *i.e.*, in the first and fourth years, the reader will notice that 85 per cent of the students who remained in college only one year had English grades between 1 and 45; whereas in the fourth year only 58 per cent had grades between 1 and 45. Or, by way of contrast again, he will see that the highest mortality occurred during the first and second years, being 56 per cent and 49 per cent, respectively, of the students whose grades ranged between 1 and 25. He will also note that the other extreme occurred when the mortality stood at 37 per cent in the 45.5–100 bracket at the end of the third year, and the survival stood at 42 per cent in the same bracket during the fourth year. A similar contrast is evident in the fact that 52 per cent of the mortality at the end of the first year was accompanied by the lowest averaged English grade, whereas the survival of 22 per cent in the fourth year was paralleled by the highest averaged English grades (*i.e.*, 40).

In Table II, the data indicate in a general way, though less uniformly, the same relationship between mortality and English grades. Mortality at the end of the first year was 44 per cent of the 420 students who entered in 1931–1932, and was accompanied by a 50 per cent distribution of grades between 1 and 25. Survival of students until the beginning of the fourth year stood at 32 per cent, and was accompanied by a 39 per cent distribution of grades between 45.5 and 100. Other data in Table II, as in Table I, show that mortality is highest when the English grades are lowest, and that it is lowest when the English grades are highest.

Since the data under Tables I and II have already indicated a close relationship between mortality and English grades among resident students, it appears feasible to present a limited national trend by offering similar data about the non-resident group. Mortality

among this latter class at the end of the first year was 42 per cent of the 113 students enroled in 1930–1931, and was accompanied by an English grade of 33. Survival at the beginning of the fourth year stood at 29 per cent, and was paralleled by an English grade of 45. The mortality at the end of the first year was 47 per cent of the 93 students who entered in 1931–1932, and was accompanied by an English grade of 29; whereas the survival in the fourth year was 28 per cent, and was accompanied by an English grade of 39. Among these non-resident students, the mortality was the highest in the first year when the English grade was the lowest. In the fourth year, the reversed condition existed.

The original study included an investigation of the accredited public schools in North Carolina in which the resident students took their pre-college education. The general trend revealed that the most efficiently qualified students came from the best equipped and well administered schools with the longest terms. The mortality of these students was less than that of the students who took their training in the lowest accredited public schools.

CONCLUSIONS

1. That the mortality of college students at North Carolina State College is about 60 per cent by the end of the second year.
2. That this high rate of mortality is accompanied by the lowest grades in English.
3. That survival in a four-year college course is accompanied by the highest English grades.
4. Finally, and by way of summary, that students with the lowest averaged English grades will withdraw from college at an earlier period than will those students who received the highest averaged English grades.

A Comparison of the Performance of Native and Transfer Student Teachers on Qualifying Examinations at the University of Minnesota[1]

RUDYARD K. BENT

Following the recommendations of an examination committee at the University of Minnesota (1931–32), qualifying examinations were given to all juniors in the College of Education as a prerequisite to student teaching. The examinations were given in order to make possible an experiment in seeking a reliable and valid basis for admission to student teaching and to protect training school pupils from poorly prepared teachers.

The examinations covered four fields: professional subject matter, general English, and the major teaching subject which was divided into two parts, the high school content and the college content. The examination program was developed under the leadership of Dr. Harl R. Douglass, professor of Secondary Education at the University of Minnesota.

The first year the examinations were given (Spring Quarter, 1932), no students were excluded from student teaching on the basis of their performance but all were permitted to teach in order that the record of their performance might be used in a study of the validity of the program. The following year, the successful completion of each examination was made a requirement before one could matriculate in student teaching. The examinations were given at the beginning of each quarter and a student was granted the permission of repeating any examination failed on the first attempt.

Since the examinations were constructed by members of the faculty of the University of Minnesota who gave the instruction in the courses covered in the tests, it was considered probable that they would possess difficulties peculiar to students transferring from other institutions. Theoretically equivalent courses will vary in content and relative emphasis of subject matter in different institutions

[1] Research Paper, No. 459, Journal Series, University of Arkansas.

and under different instructors. An instructor is inclined to place items in an examination pertaining to subject matter he has stressed or in which he is most interested. If these assumptions are valid they should be reflected in the scores made by transfer students, since the examinations would be easier for the native students and handicap the transfers. In order to test the validity of this assumption all students were divided into two groups: natives who did all of their work at the University of Minnesota, and transfers who did one or two years of their work at other institutions.

The transfer students were further divided according to the type of school from which they came: teachers colleges, liberal arts colleges, and junior colleges.

TABLE I

THE SUBJECTS: NUMBER ENROLED IN EACH SCHOOL YEAR, SEX, CURRICULUM, NUMBER OF NATIVE AND TRANSFER STUDENTS

Curriculum	1932–33 Group					1933–34 Group					Grand Total
	Men	Women	Natives	Transfers	Total	Men	Women	Natives	Transfers	Total	
Secondary.....	161	385	366	180	546	146	288	246	188	434	980
Elementary.....		51	32	19	51		53	21	32	53	104
Total.....	161	436	398	199	597	146	341	267	220	487	1084

It is the purpose of this report to compare the performance of the native and transfer students on the qualifying examinations, in order to test the validity of the assumptions mentioned above.

The subjects: The subjects were 1,084 students in the College of Education of the University of Minnesota for the school years 1932–33 and 1933–34 who took the qualifying examinations at the end of the junior year. They represented 30 major subject groups in the elementary and secondary school curricula. For the school year 1932–33, of 597 students, 398 were natives and 199 were transfers (Table I). The following year, of 487 students, 267 were natives and 220 were transfers. A large majority (980) were enroled in secondary school curricula.

The data: The data were scores on the qualifying examinations, hours of credit and honor point ratio in the fields of English, education, the major teaching subject, and all subjects combined, scores on the Miller Analogies psychological test, the College Aptitude

Test, the Minnesota Reading Test, rank in the senior class of their respective high schools, and ratings on student teaching. The basis for computing the honor point ratios was as follows: A=3, B=2, C=1, D=0, and F=−1 honor points.

Description and scope of the qualifying examinations: The examinations were divided into four parts: (1) professional subject matter, (2) English composition and literature, (3) the major teaching field on the high school level (major A), and (4) the major teaching field on the college level (major B).

The professional examination covered three fields: (a) educational psychology, (b) secondary education, and (c) techniques of high school instruction, or similar fields for elementary school teachers.

The examination in English consisted of two parts, the general and the essay. The Columbia Research Bureau English Test was employed for the former, and the students' ability in composition was estimated from essays written under supervision.

The major A examinations were designed to measure the degree to which the candidate had mastered the content of the major teaching fields as they are commonly taught in secondary schools. They contained material from secondary school textbooks that were in use at the University of Minnesota High School.

The major B examinations covered a more complete field. They were designed to measure the complete and thorough mastery of the teaching field over and above that taught in the secondary schools.

The reliabilities of the qualifying examinations, computed by the odd versus even technique, ranged from .49 to .97, but the majority fell between .80 and .90.

Native versus transfer students.—The transfer students were inferior to the native students on all units of the qualifying examinations (Table II). With the exception of education, the differences between the medians were found to be more than four times their own probable errors, which indicates they were not due to chance factors. In the case of education the observed difference was two and one-half times its probable error.

When the scores of the native and transfer students on the Miller Analogies, Minnesota Reading, and College Aptitude Test, and high school rank were compared, the median differences were compensating. The differences were slightly in favor of the natives on the Miller Analogies and Minnesota Reading tests, and the scores of the

transfer students exceeded those of the natives on the College Aptitude Test and in the high school rank.

Median differences between native and transfer students were slight in honor point ratio and student teaching ratings.

The variations among the sub-groups of transfers were greater than the differences between the natives and transfers, though there was a marked tendency for the teachers college group to be superior

TABLE II

MEDIAN SCORES OF NATIVE AND TRANSFER STUDENTS ON THE QUALIFYING EXAMINATIONS AND VARIOUS OTHER FACTORS

	Native		Transfer		Total Native and Transfer	
	N	Median	N	Median	N	Median
Education	610	−.15 SD	398	−.30 SD	1088	−.22 SD
English	624	.06 SD	421	−.17 SD	1045	−.04 SD
Major A*	393	.28 SD	286	−.13 SD	679	.10 SD
Major B*	296	.18 SD	196	−.46 SD	492	−.04 SD
Composite Score**	290	.02 SD	132	−.28 SD	422	−.11 SD
Miller Analogies	573	.12 SD	155	.02 SD	928	.08 SD
College Aptitude Test	536	.04 SD	141	.17 SD	677	.07 SD
Minnesota Reading	568	.16 SD	357	.03 SD	925	.11 SD
High School Rank	385	.90 SD	40	.97 SD	425	.91 SD
Honor Point Ratio						
Education	568	1.36	361	1.30	929	1.32
English	536	1.22	270	1.61	806	1.31
Major	567	1.60	354	1.52	921	1.57
All Subjects	592	1.40	375	1.42	967	1.41
Student Teaching Rank**	224	.04	106	.13	330	.07
University High School Rating Scale***	153	8.37	116	7.97	269	7.66

* Average median scores of all departments of 20 cases or more.
** The 1932–33 group only.
*** The 1933–34 group only.

and the junior college group to be inferior (Table III). The comparative standing of the three groups was found by ranking each one on each conditioning factor and on each criterion. The teachers college group received the highest rankings on the qualifying examination scores, liberal arts transfers second, and those transferring from junior colleges, third. The liberal arts college groups ranked first on aptitude tests, the teachers college groups second, and the junior

college groups third, while on all ratings of student teaching success and teaching personality the teachers college and the liberal arts college groups were equal, and both were superior to the junior college groups. The junior college transfers were inferior in all factors save on honor point ratio, in which case they ranked first, teachers colleges second, and liberal arts colleges, third.

Failures of native and transfer students: The transfer students were failed in greater percentages than the native students.

TABLE III

MEDIAN SCORES OF TEACHERS COLLEGE, LIBERAL ARTS COLLEGE, AND JUNIOR COLLEGE TRANSFER STUDENTS ON THE QUALIFYING EXAMINATIONS AND VARIOUS OTHER FACTORS

	Teachers College		Liberal Arts College		Junior College		Total Transfers	
	N	Md	N	Md	N	Md	N	Md
Education	125	−.23	164	−.33	109	−.43	389	−.30
English	133	−.09	176	−.17	112	−.23	421	−.17
Composite Score*	38	−.30	54	−.23	40	−.35	132	−.28
Miller Analogies	95	−.05	152	.12	108	−.04	355	.02
College Aptitude Test	23	.33	78	.18	40	.00	141	.07
Minnesota Reading	96	.03	153	.11	108	.14	357	.03
Honor Point Ratio								
Education	112	1.58	145	1.21	104	1.13	361	1.30
English	42	1.18	132	1.63	96	1.74	270	1.61
Major	105	1.41	150	1.51	99	1.52	354	1.52
All Subjects	114	1.52	155	1.37	106	1.41	375	1.42
Student Teaching Rank*	30	.60	42	.16	34	−.40	106	.13
University High School Rating Scale**	117	8.10	60	8.13	39	7.66	116	7.97

* The 1932–33 group only.
** The 1933–34 group only.

In the professional examination 44 per cent of those who failed were transfers, while they composed only 38 per cent of the total group. In English 44 per cent of the failures were transfers.

The transfer students failed the major examinations in greater numbers than in education and English. Fifty-eight per cent of all the failures on the major A, and 54 per cent on the major B examinations were transfers.

The factor of intelligence does not account for these differences for the two groups seemed to be about equal when median scores on

the Miller Analogies were compared, which were .12 and .02 standard deviation units or in percentile ranks 51 and 55—a slight difference in favor of the natives (Table II).

Conclusions: These findings suggest that since the natives and transfers were practically equal in ability, and attained similar college marks, the low performance of the transfer students on the qualifying examinations indicated that they possessed difficulties peculiar to them.

This may or may not be caused by differences in the courses offered by other institutions and those offered at Minnesota, or the fact that the examinations were made by instructors of the University of Minnesota with whom the native students were better acquainted. Other factors, such as study habits, effort, and skill in taking an examination may be operating.

The superiority of the natives was also shown by the greater number of failures among the transfers.

Although not all the differences were statistically significant, differences which were always in the same direction make a strong case for the conclusion that the apparent inferiority of the group of transfer students or the junior college transfer students is not attributable to chance errors in the data of this study.

Comparison of the College and High School Marks of Non-Graduating College Students

N. William Newsom and Morris M. Sturm

The purpose of this article is to present the results of an investigation to determine the comparison of the college and high school records of non-graduating college students. The study is based on an analysis of the high school and college marks made by 524 non-graduating college students who entered Temple University as freshmen during the school year 1928–1929, but who for some reason had not been graduated by June 1935.

Previous Research. Pierson and Nettles[1] concluded from a comparison of the high school and college scholarship of 50 students during the freshman year that college fitness could be predicated from high school ratings. Bolenbaugh and Proctor,[2] from a study of 716 Stanford University Freshmen classed according to the curricula pursued in high school, reached the conclusion that a good high school record, regardless of the pattern of subjects taken, when conbined with a standard intelligence test score, is the best basis of selecting candidates for college admission. Byrns's[3] investigation of the ability, aptitude and achievement of 968 freshmen at the University of Wisconsin during the school year 1929–1930 indicated that rank in college can be predicted from the student's rank in high school, and that the scores on the psychological tests are partly predictive since a low score promises poor college work much more certainly than a high score promises success. The investigation of Garrett[4] concluded from a study of 324 records that results during the last two years of high school were superior as a basis for pre-

[1] Celia A. Pierson and Charles H. Nettles, "A Study of High School Seniors to Determine Who Shall Be Recommended To College," *School and Society*, Vol. 25, pp. 215–216.

[2] Lawrence Bolenbaugh and William M. Proctor, "Relations of The Subjects Taken in High School To Success In College," *Journal of Educational Research* Vol. 15, (February 1927), pp. 87–92.

[3] Ruth Byrns, "Predicting College Success by High School Grades," *Nation's School*, Vol. 10, (July 1932), pp. 28–30.

[4] Homer L. Garrett, "Predictive Value of High School Records with Special Reference to Rank in Class," Doctor's Dissertation, Stanford University, 1933.

dicting college success, while certain subjects, such as English and Mathematics, had greater predictive value.

Sorenson[5] studied the high school scholarship of 461 college students and found that no definite relationship existed between the varied amounts of any subject offered as entrance credits and college scholarship, except in the case of Latin. The conclusion reached by Goldthorpe[6] on the basis of 136 students studied was that there is a substantial relationship between high school rank and the rank achieved in the first and second years of college. Douglass[7] analyzed the records of 1,196 students who completed from three to five successive quarters of college work. The results showed that the best single type of predictive data is the average high school marks; the score on an intelligence test is the only other factor which increased the accuracy of the prediction. The study of 752 students by Watson[8] indicated that the high school achievements had almost no significance for point to point prediction of college success. Hill's[9] investigation of the high school and college records of 306 graduates of Temple University indicated that they did approximately the same quality of work in both high school and college.

Procedure. The records in the Registrar's office of all students who entered Teachers College, School of Commerce and College of Liberal Arts of Temple University as freshmen during the school year 1928–1929 were examined. Only those students were included, who (1) entered Temple University as freshmen during the school year 1928–1929; (2) had not previously attended any other college or university; (3) had not been graduated from any undergraduate school within the University by June, 1935, and (4) were from a high school represented at Temple by at least three graduates. The following information was obtained for each student: (1) undergraduate college attended; (2) curriculum pursued in high school; (3) high school attended; (4) length of time remained at the Uni-

[5] Herbert Sorenson, "High School Subjects as Conditioners of College Success," *Journal of Educational Research*, Vol. 19 (April, 1929), pp. 237–254.

[6] J. Harold Goldthorpe, "The Relative Rank in High School and in The First Two Years of the University," *School and Society*, Vol. 30 (July 27, 1929), pp. 130–134.

[7] Harl. R. Douglass, "The Relation of High School Preparation and Certain Other Factors to Academic Success at the University of Oregon," *School Review*, Vol. 40, (March, 1932), pp. 174–175.

[8] Irene Watson, "Significance of High School Marks for Predicting College Success," *High School Teacher*, Vol. 10 (November, 1935), p. 282.

[9] Robert A. Hill, "The Predictability of College Success Based on High School Records," Master's Thesis, Temple University, 1934.

versity; and (5) high school and college marks. To arrive at a common system of marks, all marks were averaged on a numerical basis of 1 for A, I, E, or 90–100, 2 for B, II, A, or 80–90, 3 for C, III, F, or 70–80, 4 for D, IV, P, or 60–70, and 5 for E, V, U, or below 60.

Presentation and Interpretation of Data. Sixty high schools and 524 students representing three states were included in this investigation. Their distribution is shown in Table I.

TABLE I
HIGH SCHOOLS ACCORDING TO LOCATION

Location	No. of Schools	No. of Students
Philadelphia, Pennsylvania	15	311
Pennsylvania outside Philadelphia	31	139
New Jersey	13	68
Delaware	1	6
Total	60	524

Table II presents the average marks made by all students in both high school and college without regard to the curricula pursued in either institution. They made an average of 2.42 in their high school work but in college work their average fell to 3.41 with an actual grade difference of minus 0.99. This indicates that their college marks were on the whole 99 per cent of a grade or grade point lower than their high school work.

TABLE II
HIGH SCHOOL AND COLLEGE AVERAGES REGARDLESS OF CURRICULA PURSUED IN EITHER INSTITUTION

Institution	No. of Students	Average
High School	524	2.42
College	524	3.41
Difference		0.99

In Table III the high school and college averages of all students according to the persistency or length of attendance at Temple University are given. A large majority of these students left the University for some reason at the end of the first or second semesters at which times the differences between the high school and college marks were the greatest. Only those students who remained three semesters exceeded their high school averages. As a group they made

79 per cent of a point higher mark in high school than they did in college.

When the high school and college marks are compared on the basis of the curricula pursued in high school, we again find the col-

TABLE III

HIGH SCHOOL AND COLLEGE AVERAGES ACCORDING TO LENGTH OF ATTENDANCE WITHIN THE UNIVERSITY

Length of Attendance	No. of Students	High Sch. Average	Coll. Average	Diff.
One Semester	149	2.41	3.73	−1.32
Two Semesters	152	2.29	3.39	−1.10
Three Semesters	50	2.52	2.47	−0.05
Four Semesters	89	2.43	3.07	−0.64
Five Semesters	26	2.53	3.17	−0.64
Six Semesters	33	2.48	3.16	−0.68
Seven Semesters	17	2.56	3.50	−0.94
Eight Semesters	8	2.50	3.52	−1.02
Total	524			
Mean		2.46	3.25	−0.79

lege averages lower than the high school averages. Two groups, academic and commercial, were used, as shown in Table IV. The students who pursued the academic course in high school made an average mark of 1.00 (equivalent to the difference between a C and

TABLE IV

HIGH SCHOOL AND COLLEGE AVERAGES ACCORDING TO HIGH SCHOOL CURRICULA REGARDLESS OF COLLEGE CURRICULA

High School Curricula	No. of Students	High Sch. Average	Coll. Average	Diff.
Academic	479	2.43	3.43	−1.00
Commercial	45	2.35	3.19	−0.84

TABLE V

HIGH SCHOOL AND COLLEGE AVERAGES ACCORDING TO COLLEGES REGARDLESS OF HIGH SCHOOL CURRICULA

College	No. of Students	High Sch. Average	Coll. Average	Diff.
Teachers Coll.	204	2.38	3.25	−0.87
School of Comm.	199	2.50	3.20	−0.70
Liberal Arts Coll.	121	2.36	4.01	−1.65

B) less in college than they did in high school, while those who took the commercial curriculum averaged 84 per cent of a grade point less in college than they did in high school.

Table V gives the high school and college averages of all students according to the school or college within the university in which they took their work. In each school the students' averages were considerably lower than their high school averages. The greatest difference between the averages of the two types of institutions was made by the Liberal Arts College students. The least difference of the three groups was made by the School of Commerce students. There was, however, not much difference between the School of Commerce and Teachers College groups. For all students without regard to college grouping, the difference in the averages was 99 per cent (Table II) lower than their high school ratings.

Summary. 1. When the high school and college averages are analyzed without regard to the curricula pursued on either level the marks received in college are practically one grade (99 per cent) lower than those received in high school.

2. The high school and college averages, when analyzed according to the length of attendance in the University, showed the level of work done in college to be 79 per cent of a grade point lower than that done in high school.

3. When the high school and college averages are analyzed according to the curricula pursued in high school, the students who took the high school academic curriculum averaged 1.00 per cent grade less, and those who took the commercial curriculum 0.84 per cent less, than they did in high school.

4. When the high school and college averages are analyzed according to the undergraduate college attended the students did on the whole, from 0.70 per cent of a grade in the School of Commerce, 0.84 per cent in Teachers College, to 1.64 per cent in the Liberal Arts College lower work than they had done in high school.

Conclusions. Since the students achieved on the average approximately one grade lower in college than in high school, it is likely that all students who enter college with a high school average of C or lower will not attain the scholastic standing of C or better in college, which is generally required for continuance in college. The failure of colleges to require such standards is probably the cause of a large percentage of student mortality.

Credit by Examination

JULIAN PARK

The idea of securing university credit for work done outside the University classroom is by no means new. It is subject to such abuse that one should be specific in one's definitions and recommendations. All registrars know of "diploma mills" and fake universities which have been allowed to do business through political pull. The city of Washington has been proverbially the headquarters of such "rackets." They have by this time been pretty thoroughly eliminated from each of the forty-eight states, but in the District of Columbia even now, despite the watchfulness of the Office of Education and the American Council on Education, they are not unknown. When the writer was in Washington lately he noticed a sign on an office window indicating that therein were the palatial rooms of the "Benjamin Franklin University." Even though this sumptuous title may represent merely what elsewhere would be called a business school or even college, still the misuse of the word university is evidently still flagrant.

The idea of extending credit toward a degree based only on examinations has, of course, gone much further in Europe than America. In Oxford and Cambridge, and to a lesser extent in the municipal or urban universities of England, the tutors or dons satisfy themselves of the daily presence of their students; and in addition, Oxford and Cambridge have regulations governing the daily (and nocturnal) activities of their students that would seem to us archaic and prep-schoolish. In Oxford the average "load" of the tutor is twenty-one students, whom he may meet as he sees fit, either singly or in groups of varying size; in addition, he is expected to lecture twice a week. Attendance at *university* lectures is optional, and in theory is voluntary also at *college* lectures; but in practice a tutor's students generally find it advisable to attend each of his more formal exercises.

The University of London is the best example of an institution in which teaching and examining are in many cases separate functions. Certain certificates and degrees held by graduates of foreign or colonial universities may be validated for English practice by simply taking the requisite examinations. For a long time London was the only English university in which degrees could be obtained without subscription to a particular theological belief. It has grown rapidly to be the great external examining body of the British Empire.

The continental universities, too, have little or no concern for the daily roll call of students. There is a great deal to be said for the belief that if a student has another and better way of preparing for an important examination than by attending classes, the option is his. If many choose such a way, the administrative officers of the institution might well be justified in looking into the situation. The French professor may be an engaging teacher and a charming person, but he must be a scholar first and foremost; and no other qualities will make up for the absence of scholarship. Why should he not be a scholar if practically his entire university duty consists in preparing and delivering three lectures a week? If he wants to, he may meet his students socially; he may hold office hours for the discussion of his lectures; but these he does out of kindness and not because he is compelled to. His students know that their only requirement is to pass his examination and their demands on him have that, and that only, as their object.

Few American institutions have gone as far as that. Some have relaxed attendance rules for the good student (the "dean's list"); others, more daring, have eliminated them for the upperclassmen; only one or two among the many hundred have gone completely continental and turn their attention to more important things than calling the roll. About 160 of our colleges and universities have already adopted the comprehensive examination for seniors,[1] and a few are playing with a most interesting development of this vitally important capstone to our whole concept of examination. I refer to outside examining for seniors. Even the students like it. The only valid reason against it that I can imagine is its expense. "Students at Swarthmore, Scripps, and Reed Colleges indicated that they were not afraid of their external examiners. Previous graduates had informed them that such outside individuals were not unfair nor more severe than their own professors, and that the anticipation of being examined by outsiders brought a new and stimulating challenge into the college atmosphere. An able student in a college not at present using outside examiners was asked if he would care to be under this system. He answered (and his answer was apparently supported by others) that it was a capital idea but that, at present, he was not prepared for it. He went on to explain that in all class work the emphasis was on response in terms of what the professor wanted.

[1] See Jones, E. S., "Comprehensive Examinations in American Colleges." New York: The Macmillan Co., 1933.

Acquiring knowledge in order to be well informed and able to talk about it intelligently later on was not an important consideration for the average student."[2]

If the theory of outside examining be accepted but the practice be objected to on the ground of expense or for some other reason, there are certain compromises which may be granted. In large departments a board of examiners may be selected from within the university, preferably from men who are not tutors. In many departments several instructors read the same paper, frequently with the student's name removed, so that the whole grading is impersonal.

All outside examining, however, is biased and incomplete if the questioning is not based on a reasonably complete knowledge of the ground which each individual candidate has covered. If the criticism is still true that in America we study a course, in England a subject, then all an examiner should need is a full indication of the scope of the work done, together with a determination to be fair and to ask no catch questions based on his own idiosyncracies.

Probably no American universities have gone so far in external examining as Chicago and Buffalo. Buffalo has three types: It has approved, in principle, of outside examining for senior comprehensives and has already done as much of it as it can afford. As a matter of fact it need not be expensive if local assistance is secured. The Physics and Chemistry departments can get men, themselves Ph.D.'s, from nearby industries; there are colleges within reach which would be glad to arrange an exchange; and there are other local scholars not attached to any institution who are both qualified and interested.

For the other two types of external examining used at Buffalo the approval of the State Department of Education had to be secured. This was not difficult as far as the evaluation of certain types of skills was concerned, but the powers at Albany have not yet approved of our going quite as far as Chicago. They are, however, entirely willing to have us test mature students in certain "non-academic" fields such as art, music, accounting, mechanics, draftsmanship, etc.

The third type is one that the University of Buffalo was perhaps the pioneer in adopting on such an extensive scale. It is in line with the university's policy of expressing both entrance requirements and degree requirements in terms of attainment rather than time exposure. If students ranking in approximately the upper half of their

[2] Jones, *op. cit.*, p. 231.

high school course wish to convince the admissions officers that they have covered the same ground, assimilated the same or equivalent books, or in the laboratory have performed tasks of much the same nature, the University, for some of their degree requirements, is willing to test them by giving them the same examinations as those given in the regular college courses. If the student passes, appropriate college credit will be awarded.

This remains for the most part an interesting but meaningless gesture if the University stops there. It must extend, or offer, considerable help in some cases. Accordingly each department has prepared outlines for the use of these candidates. Every effort is made to render these syllabi adequate, comprehensive, clear, and objective. Many high school teachers give to their superior students generous amounts of their time in helping them prepare, by means of these outlines, for the anticipatory examinations. Incidentally, the outlines are useful, of course, in many other ways. They are in demand among the schools as showing what teachers ought to aim at in preparing students for specific college courses. Being fuller than the usual outline agreed upon in department meetings of the college, they should hold the members of the staff together and prevent too much differentiation between sections.

The most obvious and common objection to the whole idea centers, of course, around the principle of full discussion and personal inspiration from the classroom. No protagonist of external examinations will deny that even though both sets of students are tested by the same fact-finding machinery, those who have sat under a great teacher for a year have received intrinsic values which cannot be examined and evaluated. It is to be hoped, however, that every college student will receive such inspiration at some time during his course. Moreover, the most enthusiastic advocate of the anticipatory examination probably does not argue that more than a limited amount of credit should be granted by such tests. Furthermore, the results thus obtained are not isolated. In most cases they can be checked against advanced work in the same subject, since in a majority of instances students thus receiving credit go on to take the next course in a given department.

The University of Buffalo catalog includes, under the heading of each department, a carefully prepared statement which broadly describes and defines the subject, indicates its purpose in the modern world both of scholarship and affairs, and gives detailed advice as to how to reach the attainments expected of those who intend to do their major work in that field. Certain characteristics and require-

ments are common to all departments, irrespective of the field involved. Every department insists on the ability to use clear, idiomatic English; capacity to organize most effectively the relevant information called for; ability to deal with the important topics and to eliminate the unimportant—a sense of proportion; and in the case of laboratory science, a proper understanding of orderly, logical, scientific processes—the ability, for example, to apply previously learned principles to new situations. These characteristics are included also in the syllabi for the anticipatory examinations, which feature the following points: (1) A statement of the purposes of the course and the methods used in achieving these results; (2) a statement of the work to be done and the standards of accomplishment and other means which will be employed in evaluating the work done; (3) a statement or outline of the content of the course, together with a full bibliography and other aids which will help the student to master this content; (4) in the case of languages, the amount of emphasis to be placed on translation to and from English, together with specimens of the type of translations that may be encountered.

Examinations have been requested for practically every course given normally to freshmen, for about half the usual sophomore courses, and even for some upperclass courses. Up to September, 1936 (four years), 793 examinations have been written; in 519 cases, or 65 per cent, the students were successful and received some college credit. Since some wrote more than one examination, this does not mean that there was that number of separate candidates. There were 504 individual students, of whom 300, or 60 per cent did well enough to secure some credit for their efforts.

The most common subjects in which examinations were set are, in order: trigonometry, college algebra, American history, freshman English. The most difficult courses in which to secure credit are physics, chemistry, and American history; the easiest are accounting, freshman English, freshman Latin, and trigonometry. This may reflect either (1) the amount of duplication between the two levels, (2) the inherent difficulty of the subject, or (3) the difficulty involved in preparing adequately without the facilities available in a university. Probably all three enter to a certain extent, with the last undoubtedly playing a large part in the case of physics and chemistry.[3]

[3] For further data and information see Mills, H. C.: "The Anticipatory Examination," in *Studies in Articulation of High School and College*, Series II, Bulletin 1. *University of Buffalo Studies*, Vol. XIII (1936).

What are the lessons which the recent years of research at the University of Buffalo have suggested along this particular line? Most obvious is the confirmation of what has long been realized and complained of—the duplication of work between high school and college. Most of the students who take these anticipatory examinations did not devote a great deal of time, as they themselves admit in interviews, to preparing for them. If they are able to pass with relatively little additional study, it would seem, even granting that they are superior students, that there must be a good deal of college work carried on in high school, or vice versa. And this is true not only of trigonometry and foreign language, where there is obvious and admitted duplication, but also in such fields as English and economics in which the overlapping is supposed to be slight. The duplication in content is perhaps greater than either institution realizes. If so, it enhances the value of this procedure as a means of improving the articulation between the two. Why should superior students be bored by repeating in college material with which they are already quite familiar? It is far better for them intellectually, morally, socially, to begin on new and more difficult and more interesting work which will require them to "stretch themselves."

The device has validity no matter how the college that adopts it decides to use it. Some institutions use it merely as a means of making the student's college program more interesting and significant, more adapted to the intellectual pace and the previous preparation of the freshman; others, such as the University of Buffalo, may do all that and more: they can apply the philosophy underlying it to the possibility of securing the baccalaureate degree in less than four years. That conventional period is founded largely on tradition and disregards the fact that some college students, by reason of their greater intellectual capacity, do not need all this time to secure a degree. This recognition of the existence of individual differences need not imply any lowering of standards; none of the required work of the curriculum need be omitted; the three-year student should pass the same examinations and take the same courses as if he were spending four years. The superior student is capable of more work than the average. His educational career should be regarded as a continuous, consecutive whole, with little of the gap that now yawns between high school and college. As a bridge over that gap, and as a contribution to making such a student's education count for more, the so-called anticipatory examination should receive considerable attention.

Two Years with the Two-Unit Plan at Mount Holyoke College

CONSTANCE SAINTONGE

The older a thing grows, the more fixed it becomes, usually, and its very air of permanence makes it grow still older. The older a curriculum grows, the more difficult it becomes to change it, and because change is so painful the curriculum grows more and more venerable. Thus with the older colleges any adaptations to the major new theories of education have been accomplished only by tremendous conviction and mighty effort. It is not, as students so often think, that administrators are not alive to new trends. But they are loath to try them for what seems a good reason: lack of proof as to the permanent value of new, untried ideas. The regular four or five course schedule, for example, has "worked" for many decades; newer ones have not been put sufficiently to the test. Then, too, it has been found difficult to take valuable parts out of a new system and fit them into an older plan. And, finally, the making over of a whole system is expensive and laborious, and by the time a new curriculum is running smoothly, any number of still newer ideas are current and growing in the educational world.

Mount Holyoke College has solved a problem of this sort in what seems to be a successful way, that is, as a small test within the larger laboratory. The Two-Unit Plan, now in its second year, is an experiment in the modern mode, whereby the usual helter-skelter of courses which makes up a student's schedule is unified about two fields of thought. And this plan works under existing conditions—that is, aside from their director, no change or additon has been made to take care of the Two-Unit students. The small group simply lives within the larger one of regular students, using its facilities, but in a different way.

The Two-Unit Plan was started on its way in the autumn of 1935 with fifteen selected students who entered as freshmen, and continued in 1936 with eleven more. As the name indicates, each student has two units of study which may be changed during the year, and are often changed at the end of the year. The two are not necessarily similar, for often the individual wants a well-rounded program. The end in view is the one which has been attached to

the A.B. degree—a background of knowledge and training which enables one to live skilfully.

The aim is not, as it may seem to be, early specialization. The Two-Unit Plan is, primarily, an attempt to eliminate the choppy schedules which force students to leap from medieval history at nine o'clock, to Greek philosophy at ten, and nineteenth century English literature at eleven. Of course a single unit may combine history, philosophy and literature, but this combination occurs only when a single aim pulls these subjects together for the student, and not because she decides that some knowledge of them is necessary to her background. The Two-Unit system has actually opened new fields to students. Two literature students, for instance, who were very certain that they would stay away from science, became interested, in the course of a study of nineteenth century literature, in the ideas of Darwin and Huxley, and stopped their other work for a while to study theories of evolution. A biology student, while interested only in the life cycle of a particular insect, was attracted by the folklore and literature which have grown up around the study of biology.

Though the actual schedule is quite different from the regular five-course, required-subject one now in practice at Mount Holyoke, the organization of the Two-Unit Plan is not a complicated one. A faculty committee is the governing body, discussing and controlling matters of policy, and weighing reports of the faculty and of the students about their work. This committee is not, however, perpetually in action, for it meets only at infrequent intervals. The actual onus of details and readjustments is borne by the director of the Two-Unit students who acts as their tutor. One person added to the staff for this group work arranges the students' programs, consults members of the faculty, and keeps in continual touch with the unit work. She is the liaison officer through whose hands all the strings pass and who must keep these strings from becoming too taut or too loose.

This liaison work is kept central by the director's presence in The Sycamores, the Two-Unit house. A contact of this sort is necessary, for, being in a dubious position half-way between freshmen and honor students, the Two-Unit students require a certain period of time and a great deal of guidance to acquire academic poise. That a student of freshman age has pondered enough on the connections between the arts and sciences to choose for herself an integrated program

makes her seem, of course, more mature than she actually is; and troubles arise when a student has chosen such a course and does not know how to start in on it. *Two Uniters* have a number of hours of unscheduled time and a large amount of work handed to them at one time. At first they go rather vaguely about making one fit into the other. In these impasses it is the director who shows the freshman how to draw the connecting lines between departments, and how to utilize her study time; who goads the lazy and holds back those who prefer working to sleeping and eating. In short she is the one who pushes them quickly from a typically freshman way of doing things into an upper class way. The sophomore Two-Unit students who spent last year in The Sycamores are now scattered in dormitories among the other students. The director keeps in constant touch with them, but does not give them so much guidance as she does the freshmen.

In order to let the plan fit into the regular scheme of the college, the working out of the actual teaching of Two-Unit students is left to the departments, and it differs with each department. Some have put the students into regular courses with, perhaps, one separate meeting a week with the instructor. Other instructors meet their students only individually. Still others take a group of Two-Unit students together. This portioning out has been activated both by the necessities of the department in question and by the needs of the students. In one department where the instructors were heavily loaded, one person was relieved of some work to take entire charge of that group. In another, the Two-Unit students were apportioned to individual instructors to deal with as they saw fit. A third plan put the students into courses, to come out when they were ready for individual work.

These students are handled in somewhat the same manner as honor students. That is, one whose interest lies in one definite field goes automatically to the specialist in that field. Here, however, the work differs from honor work. For the specialist may act as adviser or organizer of the students' time. For example, a student electing a unit in the Renaissance went for her unit to the instructor in French Renaissance literature. He planned out her year with her, sending her into a course in Renaissance history for the semester, and into the Survey of Art course during the weeks they were studying the Renaissance, while he retained some of her time to work on Italian and French Renaissance literature with her.

In general the students are treated first as a group, then, as their abilities and inclinations emerge, they do individual work. A few examples show that this method can be uniformly practical. Last year the six students who elected English as a unit met once a week with an English instructor. The first two assignments were the same for all, then they differed. Two students, whose regular "course paper" style was more than adequate spent most of their time in the work they wanted—creative writing. Two others had trouble with organization and so spent several weeks on source papers. A fifth, very poor in written work, was put for nearly the whole year into the freshman English course, and the sixth decided after a week that English was not her field, and went on to other pastures. At times the five met as a group with their instructor, but they had most of their meetings in individual conferences.

The five students taking a unit in French met once a week throughout the year. Three of these attended, in addition, one advanced course. A foreign language naturally presents technical difficulties to a student with ordinary equipment who wishes to do advanced work, so several of the French students went to a phonetics course for part of the year. On the side they worked by themselves at their language, by sitting at French dining tables and by reading aloud.

I have said that the plan adds no one to the staff but the director. The paragraphs above indicate that it does add to the individual instructor's work. But usually, and this is the testimony of most of the instructors, the very enthusiasm of the student, and her sense of responsibility toward her work, make the time spent with her less of a burden than it might seem. Moreover, so few students scattered throughout several departments do not take up many hours of anyone's time. When the plan was first proposed one of the objections raised was that it was quite possible that all the Two-Unit students might elect subjects in one or two departments, definitely adding an impossible burden to the instructors who would take care of them. Fortunately this situation has not arisen. The range of subjects has been quite broad as the list below will show.

One of the fundamental qualities of the plan is its flexibility. If a project does not work, it is dropped, and another started. The Two-Unit students can be shuttled back and forth, without disturbing themselves and without disturbing the rest of the college. Some have inevitably been shuttled entirely out of the group. Three

TWO-UNIT ELECTIONS 1935–36

Subjects	No. Units Elected		Subjects	No. Units Elected	
	1935–36	1936–37		1935–36	1936–37
Art	2	1	Psychology	1½	2
Economics	1½	8	Religion	1	1
English	5	4	Zoology	1	1
English Lit.	7	5	Math		½
Romance Lang.	5	6	Philosophy		2
German	1	1½	Physics		½
History	4	8½	Chemistry		2
Latin	1		Speech		1

were dropped at mid-years of the first year, one because of her health, one because she found she needed the stimulus of regular classes, and a third because she decided she wanted the regular five-course program. Three other freshmen were taken in from the regular curriculum in the middle of the year upon the advice of their instructors. All except four of those remaining in the Two-Unit Plan until June, continued in 1936.

It is difficult to decide which students will make good Two-Unit students. Various qualities of character as well as of mind naturally play their parts in the choice. In addition to high scholastic standing, initiative, a sense of responsibility and enthusiasm for work seem to be the most necessary attributes for one who is to choose a work program which will last a year, and who will herself supply most of the interest that the instructor ordinarily is called upon to furnish. As yet the college has discovered no one test that will absolutely spot the ideal student, for it is hard to gauge such qualities as initiative, foresightedness and academic responsibility. One can take only the word of others—and preparatory school responsibility is a different thing from the college sort.

Certainly one immediate effect of the Two-Unit Plan is the instillation of a real enthusiasm for work and for definite intellectual tastes. In these two respects Two-Unit students are surely more lively than the average regular students. They are, too, undeniably more expressive. When they are confronted with house guests they talk well and interestingly. This is not just a response to a stimulus nor a purely social attribute; they have not reacted only to what was put before them, but have sought out activities, either of their own making such as their French-reading group, or in the campus organizations—in dramatic club, on the literary magazine, and in

the dance club. In study and in these extra programs they have shown an aliveness that it is good to have on a campus. It is good for a college to know how to produce it.

Of course an application of Two-Unit methods to the whole college would require many additions of the faculty and would prove very costly. But this small Two-Unit Plan has been worth while for the college if only as an experiment in teaching without the tremendous mechanical effort of a complete change in curriculum. And certainly, for the Two-Unit students, it has offered a chance to work fairly independently on ideas that excite them, and what is still more important it has accelerated their mental growth.

The Oregon Plan for High School Contacts

E. B. Lemon

During the period of the depression when enrolments were declining, student recruiting became a major activity in the field of higher education. It has been a popular topic at different educational gatherings. Judging from such discussions, it appears to be agreed quite generally among educational administrators that even in normal times, recruiting is not a matter to be entirely ignored, at least by the average institution. Competition for high-grade students, for athletes, and for promising participants in other forms of educational activities is generally keen. Quite often, the institution which is not alert to these situations attracts only those students who have not received inducements to go elsewhere.

In Oregon many of the undesirable features of student recruiting have been largely eliminated, so far as the State Colleges are concerned, through the organization of a single High School Contacts Committee. To explain the workings and accomplishments of this committee it is necessary, first, to present briefly the state set-up for Higher Education in Oregon. The Oregon State System of Higher Education was organized in 1932 by the State Board of Higher Education, following a legislative act abolishing three separate governing boards and creating a new board of nine members. The legislative act also provided for a survey of higher education which was successfully carried out under the direction of the Federal Bureau of Education.

The institutions affected by this reorganization scheme included the University of Oregon at Eugene, Oregon State College at Corvallis, the University of Oregon Medical School at Portland, the Oregon Normal School at Monmouth, the Southern Oregon Normal School at Ashland, and the Eastern Oregon Normal School at La Grande. The principal objectives sought through the organization of the unified system were economies through centralization of certain activities, the elimination of duplication in major curricula, minimizing competition and promoting better co-operation and efficiency in administration. The new Board of Higher Education named a Chancellor as its chief executive officer, responsible to the

Board for the administration of the System. Each institution has its own President, responsible through the Chancellor to the State Board of Higher Education. Each institution retains its individuality and autonomy in the administration of activities within its assigned fields. Certain functions, common to all units of the system, however, are centralized directly under the Chancellor.

The High School Contacts program is a centralized activity in the hands of an inter-institutional committee. It is composed of a representative of the University of Oregon, Oregon State College, the three Normal Schools, the State Department of Education, the President of the High School Principals' Association, and the President of the Association of City Superintendents. During the past four years this Committee has been the connecting link between the six State schools comprising the Oregon State System and Oregon's 275 high schools, as well as some 25 private preparatory schools. At a recent meeting of the High School Principals' Association, the program of the High School Contacts Committee was endorsed by a unanimous vote. In addition, the Association created a special committee to assist the High School Contacts Committee in furthering the co-operative program between the institutions of higher learning and the secondary schools.

All visits by members of the faculty to the preparatory schools are scheduled through the Committee. Any events held at any of the institutions for the purpose of attracting prospective students must be approved and scheduled by the Committee. Since duplication in major curricula has been eliminated, it follows that major work leading to specialization in a given field is available at only one institution. For the purpose of explaining this situation to prospective students and also stimulating interest in higher education among the youth of Oregon, a high school visitor spends his entire time in the field, assisting interested high school students with their educational problems and in finding the work for which they are best qualified. In addition, a counseling and guidance service has been organized, and a part time guidance specialist employed. It is not the intention of the counseling service to contact individual students but rather to assist the high school administrators in organizing an effective guidance program for their respective schools.

Each year the high school seniors of the State are contacted by the centralized Committee through the State Department of Educa-

tion. That office forwards each high school principal a supply of curricula outlines and individual cards on which the interested student indicates the field of work he intends to enter and the institution he expects to attend. These reports are forwarded by the high school principal to the State Department of Education, where the individual cards are segregated according to the institutions designated. These cards are then forwarded to the registrars concerned. Each institution is then free to correspond in its own way with the prospective students from whom cards have been received. In this way not any two institutions are dealing with the same prospect, unless the student initiates the procedure through personal correspondence with more than one school.

None of the institutions is authorized to send a member of its faculty to any preparatory school unless the visitation has been scheduled through the Committee. High schools may extend invitations to faculty members to give commencement addresses, speak at assemblies, judge contests, or render other services, but faculty members accepting such invitations are not authorized to make any expenditures of institutional funds in this connection. Furthermore, at the end of each academic year the registrar of each institution must file with the Secretary of Board of Higher Education a list of all high school visitations of whatever character which have not been scheduled through the High School Contacts Committee. This report must show the nature of the visitation, the name and position of the person extending the invitation, and the source from which expenses were met.

By legislative act Oregon has authorized certain scholarships covering a part of the tuition and fee charges equal in number to two per cent of the total enrolment of the preceding year in any institution. Annually these scholarships are promoted and announced through the High School Contacts Committee. While applications may be filed with individual institutions and each institution may make its own recommendations as to selections, final decision rests with the centralized Committee.

The State High School Track Meet and the State High School Band Contest are sponsored annually by the High School Principals' Association, with the state institutions of higher learning cooperating. The seat of these events is alternated between the State University and the State College. A journalism conference has been approved for the State University, since the major School of

Journalism is located at that institution. Similarly, a gathering of Smith-Hughes students takes place on the Oregon State College campus where the major School of Agriculture is located. Certain sectional events, both athletic and cultural, have been allocated to the respective normal schools. Other gatherings of high school students of more or less importance are held on the different campuses as approved and scheduled by the Committee.

It can safely be said that, in general, the Oregon Plan has measured up to expectations. Each institution has had programs it would have liked to advance but which were not acceptable to the Contacts Committee; nevertheless, harmony has prevailed. The Plan has been strengthened by the enthusiasm which it has received from the secondary school administrators. The High School Principals' Association has repeatedly expressed its endorsement, and it has officially placed its stamp of approval on all decisions made by the Contacts Committee.

Curriculum Trends in Junior Colleges of North Carolina

LEO K. PRITCHETT

With a wide development of public high schools in North Carolina, there has come a consequent decline in the former private high schools and academies of the State. Some of these private secondary schools have found a field of usefulness through development into junior colleges. Today practically all the private secondary schools, which formerly flourished throughout the State, either have ceased to function or have been transformed into junior colleges.

Likewise, many of the former private venture, or church-supported, four-year colleges have found it necessary, because of meager endowment or other reasons, to reduce their curricula to a two-year junior college basis. At least one junior college has been established de novo.

At the present there are at least eighteen such institutions in this State. The development of these institutions is comparatively recent, having come, for the most part, within the past twenty years. They have not developed uniformly; generally each seems to have been established to perform a function peculiar to itself.

A survey of the curricula of these colleges was undertaken in order to discover trends in their development and to reveal the degree of variation and of similarity in their offerings. This survey, covering a ten-year period from 1925 to 1934 inclusive, is an attempt to reveal the curriculum practices of the various junior colleges with respect to (1) the subjects that are being dropped or added, (2) requirements as to course sequence, (3) absolute requirements for graduation and curricula offered by the junior colleges.

The data for this investigation have been obtained from the available catalogs of thirteen junior colleges covering the ten-year period. Only the usual first two years of college work have been studied.

For convenience and better comparison, the curricula offerings have been treated by considering each subject separately.

English Offerings. Nine distinct types of English are offered by the junior colleges: composition and rhetoric, English literature, oral English, journalism, American literature, a sub-freshman course

in English, creative writing, business English, and modern literature.

English literature varies more in semester hours than does composition and rhetoric. Although there seems to be a considerable difference in the offerings of some of the junior colleges, nine out of thirteen junior colleges in the State offer two semesters, or six semester hours, of English literature. This offering has remained fairly constant since 1925.

Oral English is considered of some importance in only four junior colleges.

American literature is forcing a place in the curricula of the junior colleges. The data are not sufficient to determine the strength of this course but apparently there is a slight trend toward inclusion, particularly since 1930.

From indications, sub-freshman English, composition and rhetoric, creative writing, business English, and modern literature are courses inserted in the curricula of some of the junior colleges as an attempt to meet the needs of students. Business English is apparently the strongest in this respect.

Mathematics Offerings. The junior colleges of North Carolina, according to their catalog statements, practically agree as to what courses in mathematics should be taught freshmen and sophomores in college, and also as to the credit value which should be assigned them.

All of the junior colleges studied offered a course in college algebra. Plane trigonometry is the companion course for college algebra. Other mathematical courses offered are as follows: analytic geometry, solid geometry, introduction to mathematical analysis, differential and integral calculus. There are other mathematical courses that were offered also, such as: solid and spherical geometry, statistical methods, descriptive geometry, business mathematics.

Solid geometry and introduction to mathematical analysis are being emphasized less in the last few years. Solid geometry is being dropped gradually from the curricula, and introduction to mathematical analysis has never been generally adopted. Differential and integral calculus were inserted in the curricula of at least three junior colleges in 1934. Analytical geometry, plane and solid geometry as courses have been omitted from the curricula since 1927. Solid and spherical geometry, statistical mathematics, descriptive geometry, and business mathematics are offered by one or two institutions.

History Offerings. The history offerings are many and varied. There seems to be, however, some similarity in these four offerings: American history, modern and European history, American government, and history of Western Europe.

American history and modern European history predominate. American government seems to be finding a place in the curricula of junior colleges since 1934. In that year seven junior colleges offered American government; whereas, before that time only two institutions offered such a course.

Science Offerings. At least fifteen different sciences were offered by the junior colleges during this ten-year period. However, it may be said that general inorganic chemistry and biology are the courses offered most frequently. Physics ranks next in importance. Courses in qualitative and quantitative analysis have increased in importance in the curricula since 1932. Hygiene has received more attention from the junior colleges since 1928.

Offerings in Religion. The courses in Bible and religious education given by the junior colleges since 1925 have been many and varied. This, however, is no more than would be expected, since most of the junior colleges are church-affiliated institutions. Approximately nineteen different courses in Bible and religious education have been offered. However, such courses as missions, Bible doctrines and evangelism, Biblical exposition, church organization, discipline and history, have been dropped by the junior colleges. The tendency is to offer fewer courses in religion and to give such major courses as Old Testament study, New Testament study and religious education.

Foreign Language Offerings. There is considerable agreement as to the offerings in foreign languages. Latin is still a strong subject in the junior colleges. Greek is offered in only one institution.

French is the modern language most frequently offered, Spanish is next in importance, and German is last. German has been added by most of the colleges since 1930.

Economics, Sociology and Scattered Offerings. Newer courses, such as economics and sociology, together with some courses in practical arts and business practice, are gradually finding a place in the curricula of the junior colleges. Elementary economics and sociology have become an integral part of the curricula of many of the junior colleges. Elementary psychology is also being included although the course is not as strong as sociology or economics.

Textile and clothing, foods, cookery and home management are the most frequent in the field of home economics.

Some of the junior colleges of North Carolina made an attempt to prepare some of their students to teach in the schools of the State. The education courses offered were those required for teacher certification by the State Department of Education of North Carolina.

It has not been until recent years that the colleges have given physical education a very definite place in their curricula. It is true that some of the junior colleges offered physical education at the beginning of this study, but for the most part it took the form of supervised outdoor or indoor exercise. Today there is a tendency for the junior colleges not only to offer courses in physical education for credit, but also to offer better defined courses in that field.

Sequential Offerings. May a student pursue a subject for a semester and receive credit for that course toward graduation or must the student pursue the course for two or more semesters before receiving credit toward graduation? This is a pertinent question and a study of the sequential offerings of the colleges reveal some very interesting facts in regard thereto. According to the catalogs the present practice is to reduce sequence requirements except in three or four subject fields. The prevailing sequence remaining is that of two semesters, and the tendency is to give credit for a single semester. English, history, foreign language and science are considered sequential courses by most of the junior colleges.

ABSOLUTE REQUIREMENTS FOR GRADUATION AND CURRICULA OFFERED BY THE JUNIOR COLLEGES

Absolute requirements for graduation were determined from what are stated as absolute requirements for graduation in the catalogs of the institutions, regardless of curricula divisions actually outlined.

For graduation, all of the junior colleges studied required English, and nine of the colleges required Bible. Seven of the institutions required physical education. Only one college required foreign language, but this requirement was dropped after 1930. In 1934, two institutions required history and only one institution required mathematics for graduation; whereas, four institutions required hygiene in 1934. In general then, in recent years English, Bible, hygiene and physical education are the predominant junior college requirements for graduation.

The areas of specialization were determined by taking all curricula offered in all available catalogs which indicated that these curricula led to a certificate or to a junior college diploma. Two types of curricula are indicated: First, the senior college preparatory curricula and second, the curricula which are terminal in nature.

The study of the senior college preparatory curricula reveals that the curricula leading to the A.B. degree (six colleges) and the B.S. degree (five colleges) predominate. And, while these curricula are offered by a number of institutions, seven colleges offer a "classical" curriculum as senior college preparatory curriculum. Most of the colleges have a tendency to continue to offer the curricula which have been offered in the past. Only two junior colleges offered curricula preparing students for specific senior colleges.

It is interesting to note in passing that, from 1932 to 1934, inclusive, one institution has been offering eight senior college preparatory curricula.

The terminal curricula offered by the junior colleges seem to be vocational or semi-vocational in nature, or strictly cultural in content. The junior colleges at one time or another during this period of investigation offered as many as thirteen terminal curricula. However, there were only five institutions which offered as many as seven terminal curricula.

Nine colleges offered a terminal diploma or certificate in music. Seven schools offered terminal curricula, known as a "terminal curricula" or "general curricula." Five institutions offered a certificate or diploma in art. Five junior colleges offered a certificate or diploma in expression, seven offered terminal commercial curricula, five offered terminal normal (education) curricula and six offered terminal home economics curricula.

There is apparently little agreement among the colleges as to how many terminal curricula to offer in the program. Some institutions have increased their terminal offerings, others have decreased them. Still other colleges have only the required and elective basis, the student selecting terminal courses if he wishes, from the subject offerings presented.

The study of the frequency of the areas of specialization indicates then, that the junior colleges probably have two objectives in their programs: First, to prepare the student to enter a senior college to complete his education, and this is done by offering curricula leading to the A.B. or B.S. degrees, or a general college preparatory

curriculum which is flexible enough to prepare the student for the senior college of his choice; second, to offer terminal curricula which may help the student to live a more useful life or to earn a living, and this is done by offering a general elective terminal curriculum, commercial, music, normal or home economics curricula.

SUMMARY

It is evident that the colleges today have enriched their curricula by offering many additional subjects which in the past received only passing attention. Offerings in government, economics, sociology, world history, psychology, hygiene, physical education, American literature, home economics, and commercial subjects are some of the offerings which have been added within recent years to enrich the curricula of the North Carolina junior colleges.

It is, perhaps, reasonable to say that junior colleges are trying to follow the present day philosophies of education; they are giving the student a better understanding of present day social and economic conditions, and of national and international problems; and they are focusing attention upon physical fitness and personal and group hygiene.

College Catalogues—Some Shortcomings

C. S. Kilby

Most of the articles on college catalogues which I have read have treated the subject more or less sarcastically. As far back as 1913 in the Eighth Annual Report of the Carnegie Foundation, President H. S. Pritchett made such remarks as,

"An honest college ought to be represented by an honest catalogue. Even modesty ought not to be wholly out of reach."

"It is not too much to say that if the one thousand and more colleges of the country were judged upon the basis of the literary excellence, the clearness, and the honesty of their catalogues, the showing would be an extremely embarrassing one."

Many catalogues "so urge upon the reader their judgment as to their own incomparable excellence that they repel him by the self-revelation of lack of knowledge, judgment, and good taste."

"There is at present no catalogue that would not be vastly improved by more careful editorial scrutiny."

Fortunately, some improvement has been made since Dr. Pritchett's report. He tells of one catalogue which described a teacher as "the possessor of a delicate poetic nature," and another which said, "Our reputation for educational efficiency is world-wide," and on the same page, "This past year a new factor has entered into our school life. We have an endowment fund well started." Dr. Pritchett quotes from the catalogues of a small Nebraska college: "The history of education is traced from its origin in the Garden of Eden." Catalogue proofreading, he says, is proverbially careless, but he feels that there is a wry truth in the catalogue of a Texas college when it states, "It will require four years to complete this curse."

H. F. Ward in his book called *The American College Catalogue* says that "far too many college catalogues resemble almanacs or cheap municipal or state reports."

Among other purposes, the college catalogue ought to be, next to its alumni, the chief "salesman" of the institution, and most institutions regard it at the least as a significant aid in recruiting a student body. In spite of this businesslike aim its defects and shortcomings stand forth on the slightest examination. Reeves *et al,* in their outstanding text *The Liberal Arts College* point out many re-

spects in which the catalogues of the thirty-five colleges included in their survey are weak. Only ten, they say, give "fair and proper statements" concerning accreditation and in seven catalogues the statements are "evasive or misleading." With regard to material on courses of instruction—the feature which receives more pages than any other in the average college catalogue—"the evidence is clear that considerable improvement could be made in practically all of the catalogues." Concerning the catalogue as a whole, these authorities say, "Poor organization characterizes eighteen catalogues," and they recommend that it would not be out of place as a device to secure better organization and greater literary excellence for the editor of the catalogue to be named at some prominent place in the bulletin. They conclude their remarks on college catalogues with the statement, "There is much room for improvement in all of them."

The truth about the matter is that college catalogues often amount to nothing more than accumulations based largely upon the the exigencies of a thousand and one minor situations. Johnny Jones wants to take eighteen hours of college work, spend five hours a day in the college dining room earning his meal ticket, and at the same time become president of his fraternity and play in the college orchestra. Johnny persuades the dean that he can do all this, but the dean makes at least a mental note to amend the catalogue next year, "Students taking eighteen hours and doing as much as five hours of outside work may not take part in extra-curricular activities." Many catalogues devote a large part of their space to just such material. It becomes a tremendous memorandum book for deans, registrars, and, to some extent, for faculty members, although the ignorance of faculty members concerning their own college catalogue is a thing that need hardly be spoken of. This "accretion" eventually becomes so heavy that even the prospective student, for whom it is supposedly intended, does not read it. The worst feature of this accumulative tendency is not so much what it includes as what it excludes. College catalogues, being memorandum books, come to lack perspective in a view of a whole institution, and especially to see that institution from the student point of view. I sent out a questionnaire to over one hundred students who had received the bulletins of a state university during a given period and found that the student point of view was lacking on such items as self-support and living conditions, curricula, and especially course descriptions.

It seems to me that the essential excuse for a poor catalogue lies in our neglect to set aside adequate time and adequate help to issue it. I once made the rounds of the various deans in a state university to find out what methods they used in preparing their bulletins. Many of them at first did not know just what I was talking about—they really did not have much method, they said. Professor so-and-so usually looked after it, or there was a committee that tried to get together and go over the material. The dean of the College of Medicine said he really didn't know anything about it, and didn't care. He referred me to his secretary for information. Later, I talked to the printer who had charge of that university's catalogues. I asked him how systematic the colleges were in submitting their material and with a sardonic smile he brought in the galley and page proofs of the liberal arts college catalogue. Even the page proof was almost illegible from dozens of additions of new material and corrections of a kind which should have been made before the copy reached him. He said it mattered little to him, as the university was paying the bill, but he frankly wondered if the members of that catalogue committee were as systematic in their class work and other things as in the publication of the bulletin which was to represent that college to the 15,000 people who received the liberal arts bulletin that year.

It is my conviction that the members of any catalogue committee should be relieved of not less than three hours per week of teaching during the semester in which the catalogue is issued. The members of the catalogue committee on which I am now serving spent about one hundred fifty hours each on the last issue of our catalogue, and we were still far from satisfied with our work. Among other legitimate reasons, a catalogue is issued to represent a product supposedly for sale. That product in a college is education. One wonders if the challenge might be met to find a catalogue offering any other product—great or small—which has so little time placed upon its composition and which does such a poor job of giving correct and adequate information. We of course are not implying that college catalogues should descend to the cheap phraseology of advertisements in popular magazines, but we do feel that some colleges need to learn the difference between dignity and plain dullness.

There is at present a healthful trend in education toward greater perspective as to institutional, departmental, and course aims. The broad view is increasingly apparent in such reforms as subordinat-

ing credits, grades, compulsory class attendance, residence, and all the other minutiae (I dare even use that word) of so-called higher education. The time may yet come when we will feel the hearty comic element in refusing to graduate a student because he missed a half-dozen too many classes in his senior year, or because he is a sixteenth grade point short. We will graduate him because he has met broad, comprehensive requirements and has shown the marks of an educated man. The college catalogue of course is supposed to reflect the work of the institution it represents, and it should be the business of catalogue committees to see that these changes in educational policy are adequately set forth in the literature which goes out. The reduction in the number of courses which will be possible as integration takes place will allow more space for adequate course descriptions. As a humorous experiment, sit down sometime and look over the course descriptions in your college catalogue (if your institution is not one which has discarded them altogether) and ask yourself how interesting they would sound to you as a prospective freshman.

Descriptive Astronomy.—An elementary course dealing with fundamental facts, principles, and methods. Frequent access to the students' observatory.

Introductory Psychology.—A course prerequisite for all other courses in the Department and also open to second-year College students.

Money.—An examination of various theories of the factors which determine the value of money in the short- and in the long-run.

The Eighteenth Century.—The poetry of the eighteenth century.

These seem to have reached the golden extreme demanded by a college president in his notification to departmental heads concerning material for the new catalogue that "all recommendations of the peculiar usefulness or pleasantness of a given course to students be omitted."

Many college administrators and professors have developed a naive escape from several problems by laying the blame on the "poor material we get." Is it possible that we have been slightly at fault ourselves in detaching our courses from all ordinary life interests, and that this attitude of ours is reflected in dull and cluttered catalogues which give students the worst possible introduction to our colleges? Is it a sign of plain insanity on my part to suggest that a college catalogue might become the means of "toning up" an institution? Fortunately, this is not entirely in the realm of pure theory. We have, I think, a single but almost perfect illustration of

vitality in a college catalogue. I refer to the bulletin issued by the General College of the University of Minnesota. The purpose of this College, says the bulletin, is "primarily to provide broad training for that large body of students who seek an overview of modern life and of man's activities rather than specialized study. . . . The new courses of the General College tend to build in the mind of the student a background of understanding of the present world, of his part in it, and of himself. They give him the vital comprehension of *what* other men and women do. They teach him also *why* and *how* things are done. They should, therefore, serve to satisfy his intellectual curiosity, and to prepare him for enlightened living in his public and private relations."

That this catalogue has been made a "human" document is evidenced by the course titles, *i.e.*, such subjects as *Straight and Crooked Thinking; The Human Body in Operation, in Health and Disease; Selecting and Maintaining a Home*, and *Art and Ourselves.* A typical course description will illustrate the dynamic quality permeating the whole catalogue. The introductory course in psychology is described as follows:

> The first half of the course will consider why college students and others differ one from another. Such questions will be discussed as: What is mind? Are all men created free and equal? What is intelligence? What is an I. Q.? How is intelligence measured? Is there more than one kind of intelligence? Can we improve intelligence? Are women smarter than men? Is it true that women never reason? Why are different races of people different? What part does age play in individual differences? Are two people ever exactly alike? Can intelligence be ascertained by the shape of the head and face? Do the stars influence our behavior? Can we read people's minds? Can behavior be predicted from handwriting? Are all blondes fickle? And is there anything to numerology?
>
> In what ways do differences come about? How are all of our various traits developed? The part played by the nervous system in behavior: how we hear, see, taste, smell, and the like; what traits we are born with and what we acquire; what causes emotion; whether emotions are always bad; the way in which advertisers and salesmen play upon our emotion in selling us their products; how we can build up sales resistance; why we fight, become angry, and fall in love; the part played by the glands in emotional behavior, also the influence they exert in our physical development.
>
> The second half of the quarter's work will help to form a more complete picture of the individual. It will deal with questions of how we learn; how we improve our memories; how we break bad habits and build up good ones; how age influences learning; how other people shape our behavior; what is hypnotism; what is mob behavior; what gives rise to new things such as inventions; what is personality; whether it is possible to have two entirely dif-

ferent personalities; how personality is measured; how we can learn to get along with other people; the kind of work we are best fitted for and how we can develop healthy, normal, and pleasing personalities.

Having seen how people differ, how these differences come about, and how our traits are combined into personality, the discussion will finally center upon how personality breaks down; what happens when we go crazy; why drunkards see snakes; whether insanity can be cured; how to reduce insanity; the characteristics which make people "peculiar"; if a genius is insane in some respects; what is a complex; what is psychoanalysis; if insanity is hereditary; what happens when people see visions; what is an introvert, an extravert; why we sometimes think everyone is looking at us or talking about us; what happens when we have the "blues"; why some people think they have every disease they hear of; why we sometimes think the world "has it in for us" and at other times we feel that life is perfect.

Throughout the course stress will be laid upon the practical aspects of psychology rather than the attempt to train the student to become a specialist in the field of human behavior.

Compare this with the traditional course descriptions above and you will have a "freshman-eye" view of a college the courses in which might possibly become as humanly significant as athletics, fraternities, and social life. The truth is that there is not as great contrast between the courses themselves as the above illustrations suggest, but the fact remains that prospective college students reading the two catalogues will have entirely different reactions, and I dare add that one will anticipate his courses with more pleasure and challenge than the other. Such a bulletin also sets a standard for the faculty, and in fact, appears to invigorate the college as a whole.

It seems to me that this General College Bulletin points in the right direction. It would be appropriate for any catalogue committee to study it for its general spirit, its perspective, and its academic vitality. It is true that bulletins of this kind are the result—rather than the cause—of changes in educational aims and philosophy. The danger is that in the traditional rush and equally traditional neglect with which our catalogues are issued those educational changes which are taking place in our institutions will not be reflected in our catalogues. Now that the North Central Association and other educational agencies have given us the challenge to be "different," the experimental attitude, the broad view, may extend themselves to our college catalogues.

An Easier Method of Computing Point Ratios

LAWRENCE C. UNDERWOOD

This method, used successfully by the writer for the past two or three years, may be of interest to registrars who must compute point averages or ratios based upon hour load and quality points.

The method of developing tables of any range will be described further in this article. Let us observe the use of a small table suitable for hour loads of 12 to 20. The following table is essentially a table of point ratios less than 1.00 for 12 to 20 hours.

Points:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Hours																			
12	8	17	25	33	42	50	58	67	75	83	92								
13	8	15	23	31	38	46	54	62	69	77	85	92							
14	7	14	21	29	36	43	50	57	64	71	79	86	93						
15	7	13	20	27	33	40	47	53	60	67	73	80	87	93					
16	6	12½	19	25	31	37½	44	50	56	62½	69	75	81	87½	94				
17	6	12	18	24	29	35	41	47	53	59	65	71	76	82	88	94			
18	6	11	17	22	28	33	39	44	50	56	61	67	72	78	83	89	94		
19	5	11	16	21	26	32	37	42	47	53	58	63	68	74	79	84	89	95	
20	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95

If a student has fewer quality points than hours, a direct reading will be obtained from the table. For example: 16 hours and 5 points lead to the line-and-column intersection at the number 31, indicating a ratio of 0.31.

If there are more points than hours, the first step of the division is made mentally, the quotient written before the decimal point, and the *remainder* figured by the table. Example: 16 hours and 21 points, quotient 1 and remainder 5, which is found on the table to represent .31; result, 1.31. Likewise, 16 hours and 37 points would yield 2.31. This mental computation and the indirect reading can be made more quickly than another section of a ratio table could be found for a direct reading.

Note that the (½) has been retained in the 16-hour line. If the totals were 16 hours and 2 points, the student would be given the benefit of the fraction and the ratio would be written 0.13. If the totals were 16 hours and 14 points, the ratio could be read directly from the 14-point column, or, by the "subtraction method," from the 2-point column: the ratio is 2 points less than 1.00 and can be found

by subtracting 0.12½ from 1.00, giving 0.87½ or 0.88. Therefore in working directly we will increase the ½ to 1, and in using the subtraction method we will drop the ½. If an error of .01 is not considered important, or if the subtraction method is not used, the table need not show these fractions.

Certain principles and actual ratios will quickly be memorized. Note the values for one point at each hour load, as they will frequently relieve one of looking at the table at all. If we remember that one point in 15 hours is 0.07, we can readily see that 14 points would be 0.93, and 16 points 1.07, without reference to the table. For a 15 hour load the ratios for 3, 6, 9, 12, and 15 points are 0.20, 0.40, 0.60, 0.80, and 1.00; and these figures may occur often in the schedules of most schools.

It is an easy matter to prepare a table in any range desired: for instance, to use in computing ratios for a year's work, with a range of about 24 to 36 hours. Rule a sheet of paper to receive the decimals in columns under each point heading from 1 to the maximum needed, and in horizontal lines to represent each hour load used. On an adding machine keyboard set up the reciprocal of the number of hours, obtained from a table of reciprocals or by calculation. If n is the number of hours, the reciprocal of n $(1 \div n)$ represents the point ratio of one point and n hours. Now depress the repeat key, and, after each stroke of the machine, copy the decimal appearing in the total register. Take the nearest useful decimal—ordinarily two places—but be sure there are enough places in the reciprocal being used that no cumulative error will creep into the figures recorded. When the reciprocal has been added into the machine twice, we have $2 \div n$, or the point ratio for 2 points and n hours; three times, 3 points; etc.

Let us observe the process in building the 32-hour row. $1 \div 32$ gives .03125, the reciprocal of 32, which is set up on the keyboard. The repeat key is depressed to hold this number on the keyboard.

Strokes of Machine (Hence, Number of Points)	Total Observed	Useful Decimals Recorded on the Horizontal 32-Hour Line
1	03125	.03
2	06250	.06
3	09375	.09
4	12500	.12½
5	15625	.16
6	18750	.19
7	21875	.22

The table is continued on each line until the highest decimal under 1.00 has been copied. A table for ordinary yearly schedules can be contained in a sheet $8\frac{1}{2} \times 11$. Possibly tables for larger totals cannot conveniently be made on this plan, the calculating machine or the book of tables being used in such cases.

Within its proper limits, however, this method will be found to be a valuable short cut in a routine job requiring both speed and accuracy.

EDITORIAL COMMENT

ARE WE OVERSELLING EDUCATION?[1]

For those of us—and this probably includes all of us—who are ever fearful lest our dearly acquired professional ideals may become devitalized by the daily demands of what passes as practical administration or necessitous routine, the present situation in higher education furnishes an abundance of stuff upon which discouragement, discontent, and distrust could easily feed. For the moment, our universities and colleges seem destined to be the victims of their own victory. From the beginning, they have professed with fervor, proselyted with energy and prophesied with enthusiasm the greatest of the causes of democracy. Elementary instruction for all, secondary schools for all, higher and professional training for all, naturally and gradually, came to be included within the growing concentric circle of the system of education for a free people. With a high spiritual complacence, the underlying material obstacles have been disregarded. We have trusted to those rough and ready checks of an imperfect civilization to maintain the balance between aim and accomplishment. The rounding route of progress has been *more* students as a plea for *more* money, with which to build *more* buildings to house the staff of *more* departments, to render *more* service to attract *more* students as a plea for *more* money.

Throughout this plan and process of growth, we have been actuated by no selfish institutional motive. The ethical and economic superstructure which was being erected upon the foundations of a democratic civic idealism required more, and ever more education. Though sometimes painfully difficult, it has not been impossible to convince the citizenry of our commonwealths of the necessity, the worth, and the farseeing wisdom of dedicating increasing amounts of revenue for the expansion and intensive development of the system of higher education.

Not omitting the worldwide diminishing purchasing value of the educational dollar, no present-day fact is fraught with more serious problems affecting the present usefulness and the future vitality of our colleges, universities, professional and technical schools than

[1] Address by President Edward Charles Elliott of Purdue University, at the Second Conference of College Registrars and Admissions Officers of the State of New York.

that of the unexpected increase in the number of students during recent years. The exact amount of this increase for the country at large is not known with certainty.

The unprecedented conditions produced by the depression sharpened suddenly the two horns of a material dilemma—by multiplying the student body, and by diminishing the financial resources normal to our pioneer prosperity.

One is, I am convinced, secure in the assertion that today there is not a single higher educational institution which possesses resources commensurate to its assumed or delegated duty and responsibility for educational and scientific service; especially for the effective teaching of students on its own campus. And there is little likelihood that the resources will be increased sufficiently and promptly enough to provide competent teachers and the necessary material facilities with which to carry out with full effectiveness the accepted obligation of students, to the state and to society.

What, then, shall be the practical course of action? It is easy to define the theoretical position that society, having created the educational system, has assumed automatically the solemn duty of maintaining for all of its youth the full opportunities of these institutions. Nevertheless, the grim fact remains that higher education is in real danger of being oversold; oversold to a people becoming petulant towards the rising expenditures of taxation for educational purposes; and, what is perhaps more important, oversold to a democracy which has not yet recognized the principle that the real ferment of progress is to be found in *the superlatively trained, unselfish leadership of a select minority.*

The entire system of higher and professional training has become too great a constructive factor in our modern civilization for any one to entertain any doubts as to its stability, its enlargement, and its future influence. On the other hand, the vitality of this system is ultimately determined by the quality of the training and culture of students as individuals. While the suggestion to impose further and higher standards as a condition of eligibility for the opportunities of the system apparently flows from lack of material resources to serve the growing mass of students, in reality a deeper issue is involved. This issue is a higher educational service to students of higher educability. If we are to study fruitfully the best condition of student life, we shall be obliged to study at the same time those preventable conditions that make for student mortality.

The greatest struggle going on in the world today—significant and for the most part carried on in silence—is the struggle for the possession of superior human ability. Those who have the capacity to see beneath the surface of things have become keenly aware of the efforts on the part of groups and classes to secure for their own purpose the relatively few of human kind possessing capacity for extraordinary achievement. It does not require any high quality of prophecy to assert that in the next generation, and in the generations to follow, that nation, that class, that group which in this generation succeeds in winning the larger share of individuals of superior ability and training will control the affairs of our civilization.

FROM FIGURES AND TABLES

According to President Raymond Walter's report in the December nineteenth issue of "School and Society," the enrolment in the higher institutions of the country continues on the upward swing. A grand-total advance of 7.3 per cent in 1936, as compared with an 8 per cent rise in 1935 presents leaders in education with a trend which is challenging in its portents. Is education the panacea which is being sought after by those who were frost-bitten during the chilling years? Will the gearing-up process which ensues when institutions bulge with enrolments discourage those few who should be expected to produce culture, because of the effort to teach the many to consume culture? Or should the institutions of the country become mass-education-conscious and develop a program which will give more young men and women an opportunity to live a richer and happier life during the post high school years, at least?

The statistics on degrees granted, presented by Registrar Fred Kerr in the January report of the Committee on Special Projects of the American Association of Collegiate Registrars, present a picture with other implications. That from 2.5 to 3.5 per cent more degrees were granted by higher institutions in 1935–36 than in 1934–35 indicates a lower mortality among students in course. Freshman classes in 1931 were larger than those of the following year. A higher number of degrees in 1935–36 suggests a greater persistency during the last year or two. It is comforting to know that the hopes and ambitions of youth have been nourished rather than dashed upon the rocks by the unkind winds of lean years.

M. E. G.

PROGRAM OF THE TWENTY-FIFTH NATIONAL CONVENTION

HOTEL KANSAS CITIAN
KANSAS CITY, MISSOURI
APRIL 13, 14, 15

Order of Sessions

APRIL 12, MONDAY

8:00–10:00 P.M.

Meeting of the Executive Committee
Registration of Delegates
Informal Reception in charge of the Committee on Introductions, Mr. C. P. STEIMLE, Chairman

APRIL 13, TUESDAY

GENERAL SESSION—9:30 A.M.–12 M.

Presiding Officer.....MR. J. R. SAGE, Iowa State College
Invocation
THE REVEREND HARRY CLAYTON ROGERS, Linwood Presbyterian Church, Kansas City
Address of Welcome
DR. GEORGE MELCHER, Superintendent of The School District of Kansas City
"A Study of the Relation Between Budgeted Expenditures and Teaching Load"
MR. EZRA L. GILLIS, University of Kentucky
"The Anaemia of Orientation"
DR. CHARLES E. FRILEY, President, Iowa State College
"Present Situation in Intercollegiate Athletics"
MR. JOHN L. GRIFFITH, President, National Collegiate Athletic Association
Discussion
Announcements—Mr. H. H. ARMSBY, Chairman on Local Arrangements, Missouri School of Mines and Metallurgy

12 M.–2:00 P.M.

Women's Luncheon

SECTIONAL MEETINGS—2:00–3:45 P.M.

SECTION A

Universities, Professional and Technical Schools
Chairman.....MR. RODNEY M. WEST, University of Minnesota

Panel Discussion:

I. Problems in Selective Admissions: Graduate and Undergraduate.
II. Problems in Institutional Reorganization.
III. Problems of Adjustment to Meet New Institutional Methods.
IV. Problems in Office Administration.

Members of the Panel:

R. M. West, Univ. of Minnesota — E. J. Grant, Columbia Univ.
F. L. Kerr, Univ. of Arkansas — R. O. Wilson, Univ. of N. D.
G. P. Tuttle, Univ. of Illinois — W. S. Hoffman, Penna. State Col.
E. C. Miller, Univ. of Chicago — E. J. Matthews, Univ. of Texas
G. W. Lemke, Washington Univ. — C. H. Maruth, Univ. of Iowa
Katharine George, Northwestern Univ.

SECTION B

Colleges of Liberal Arts, Teachers Colleges, Junior Colleges and Normal Schools

Chairman—MR. C. W. HELMSTADTER, Municipal University of Omaha

"Objective Versus Technicalities in Determining Advanced Standing"
DEAN W. P. SHOFSTALL, Stephens College

4:00 P.M.

Tour of the New Municipal Auditorium

6:30 P.M.

ANNUAL DINNER

Toastmaster.....MR. J. R. SAGE
Address...DR. J. DUNCAN SPAETH, President, University of Kansas City

APRIL 14, WEDNESDAY

GENERAL SESSION—9:30 A.M.–12 M.

Program arranged by Committee on Special Projects

Presiding Officer.....MR. IRA M. SMITH, University of Michigan

Procedures in the Certification of Teachers
MR. ROBERT L. WILLIAMS, University of Michigan
Discussion led by Registrars representing the following States:
Alabama, Florida, Illinois, Indiana, Minnesota, Missouri, North Dakota, Ohio, Oregon, Washington, West Virginia, Wyoming.

"A Little Light on Grading Systems"
MR. CONRAD VANDERVELDE, Dean, College of Emporia

Discussion Leader.....MR. C. F. ROSS, Allegheny College

Potentialities of the New Test Scoring Machine in the Field of Educational and Vocational Guidance
E. C. SCHROEDEL, International Business Machines Corporation, New York City

Report of the Nominating Committee
Chairman.....MR. ENOCH C. DYRNESS, Wheaton College

Announcements—MR. H. H. ARMSBY, Chairman on Local Arrangements, Missouri School of Mines and Metallurgy

12:30 P.M.

State and Regional Associations Luncheons

2:00 P.M.

"Admission to the General College, University of Florida"
MR. H. W. CHANDLER, University of Florida
"The Follow-Up of the Eight Year Progressive Education Experiment"
MR. JOHN L. BERGSTRESSER, University of Wisconsin

3:30 P.M.

Tour of the City—Tea at the University of Kansas City

7:30 P.M.

Open Forum
Presiding Officer.....MR. JAMES A. GANNETT, University of Maine

APRIL 15, THURSDAY

GENERAL SESSION—9:00–11:00 A.M.

Presiding Officer.....MR. FRED L. KERR, University of Arkansas
"A Ten-Year Study of Iowa Placement Tests"
MR. H. H. ARMSBY, Missouri School of Mines and Metallurgy
"Is There an Educators' Dilemma: Flexibility Versus Standards?"
DR. EDWARD S. JONES, Director of Personnel Research, University of Buffalo

BUSINESS SESSION—11:00 A.M.–12 M.

Presiding Officer.....MR. J. R. SAGE, Iowa State College
Reports of the Chairmen of Sectional Meetings
Reports of Committees
Reports of Association Officers
New Business
Introduction of New President
Adjournment

PROFESSIONAL NEWS

STUDIES REPORTED BY REGISTRARS

Registrar E. H. Canon, of the Western Kentucky State Teachers College, reports a study of a group of migrating students who completed prescribed curricula and were graduated from a degree-granting institution.

In this study an analysis was made of the 1936 graduating class of a standard four-year college. The graduating class consisted of 297 members, 50 per cent of whom had teaching experience. Of these 34 per cent had been in attendance continuously since admission to the institution, and 98 per cent had pursued curricula designed primarily for the training of teachers on the elementary and secondary levels. The median age of the class was found to be between 24 and 25 years with the mode between 22 and 23 years of age. Of the 297 members of the class, 121 or 40.7 per cent had earned credit in other institutions.

This group of 121 was selected for this study. The median number of semester hours these students had earned in other institutions was 33. The greatest number of hours earned by any individual was 113. Of this group 37 members or 12 per cent had earned 60 or more hours in other colleges. Of those who attended other colleges, 72 attended one college only, 34 attended two colleges, 10 attended three colleges, 4 attended four colleges, and 1 attended five colleges.

A study of the transcripts of credits presented by colleges attended before transfer revealed that the median grade made by the group was 1.8, which is interpreted as two-tenths less than a grade of "B." Their academic achievement in courses taken at the college granting the degree was represented by the same median, 1.8.

Three classes graduated from the Philadelphia College of Pharmacy and Science were studied by Registrar John E. Kramer in respect to occupations reported.

A tabulation of occupations reported by the graduates follows:

Field of Employment	Number in Class		
	1911	1926	1931
Retail Pharmacy Owners.....	15	32	17
Retail Pharmacy Employees....	10	21	31
Pharmaceutical Salesmen.....	6	11	11
Miscellaneous Fields.....	13	20	11

This tabulation shows that the proportionate number of pharmacy owners among the graduates of these three classes ranged from 38 per cent in 1926 to 24 per cent in 1931, with the 1911 class occupying a middle position at 34 per cent.

Mr. Harry E. Elder, of Indiana State Teachers College, has completed a very interesting study on Teaching Assignments of 8,413 teachers in Indiana High Schools during the School Year of 1936-37.

The purpose of this study is to determine the license combinations required to meet the teaching assignments of teachers in Indiana high schools. As a basis for the investigation 14,560 assignments of 8,413 teachers listed in the state directory, distributed in December, 1936, have been analyzed.

This study contains several very interesting tables, including one on the desirable combination of subject-groups as indicated by teaching assignments.

True E. Pettengill, of the University of Minnesota, has completed a study on the Trends in the Marking System at the University of Minnesota. This study summarizes chronologically the various systems of grading that have been in use since 1869. In addition to the grade scales, the various formulae for determining student rank are herein presented. Copies of the study can be obtained from the author.

STUDIES IN PROGRESS

The studies which are included in the following report have been reported by members of the Association. Most of the studies are still in progress. Written copies of those which have been completed can be obtained by writing directly to the person in charge.

When the copy for this issue went to press, reports were still being received. Consequently, this listing is not all inclusive.

Admissions and Achievement

Prediction of Ultimate Success in College—D. D. Leib, Connecticut College.

Relation between Certain Factors in High School Education and Success in College.—Professor Henry Kronenberg, University of Arkansas, in progress.

A Study of Students Ineligible to Continue for Second Semester, 1935–36, on Account of Grades Made during the First Semester.—President M. G. Neale, University of Idaho.

Comparison of Achievement of Junior College Students with Four-Year College Students in Last Two Years in Senior College.—G. S. Patterson, Wake Forest College, November, 1936.

Relation between Size of High School and Rank in College.—William S. Hoffman, Pennsylvania State College, complete.

Forecasting Ultimate Success or Failure of Freshmen by Comparison of High School Marks, Psychological Tests and Grades of First Quarter's Work. (This study covers the period 1933 to 1938 inclusive.)—Austin W. Smith, Tennessee Polytechnic Institute, 1938.

A Study of the Academic Performance at the College Level of Students Who Enter on Scholarships Won in Competition at the High School Level.—Helen M. Allison, Associate Registrar, University of Western Ontario, London, Canada.

The Success in College as Predicted by High School Grades and Placement Tests at St. Mary's College.—Brother Richard, Dean, will continue over a period of years.

The Contribution of the First Semester of General Chemistry to the Students' Vocabularies.—Sister M. Reginald, Notre Dame Jr. College, St. Louis, Mo., February, 1936.

Predicting Scholarship of Students Entering the University of Minnesota with Advanced Standing from Other Institutions.—R. M. West, University of Minnesota.

Forecasting Post-College Success from Data of U. S. Office of Education Study of Economic Status of University Alumni.—Howard R. Taylor, University of Oregon, July, 1937.

Predictive Measures for Use in Fraternity Pledging.—Victor Rosenfeld, University of Oregon, April, 1937.

Relation of High School to College—Study of Articulation with Special Reference to Guidance and Curricular Patterns.—E. B. Stevens, University of Washington, January 1, 1937.

High School-College Relations.—Fred Aden, Chairman, University of Colorado.

Personnel

A Study to Compare the Personnel Ratings of Students by Faculty Members with Ratings by Their Class Mates.—G. E. Metz, Clemson College.

Procedure for Making Complete Academic and Personal Data about Individual Freshmen Conveniently Available for Freshman Counselors, and for Ensuring Its Adequate Use.—F. Taylor Jones, Drew University, September, 1936.

Organization of Counseling System.—Professor L. D. Hartson, Oberlin College, May, 1937.

A Study of the Economic and Social Background and Academic Achievement of Engineering Students (a continued study).—E. J. Howell, A. and M. College of Texas.

A Study of the Effect of the N.Y.A. Employment upon Scholarship.—M. E. Gladfelter, Temple University, June, 1937.

Individual Program Patterns for Majors in Different Fields. A Study of 2,000 Graduates Who Have Had All Their Undergraduate Work at St. Olaf College.—J. M. Bly, St. Olaf College, April, 1937.

The Relationship between Freshman Marks and Study Environment.—Brother Richard, Dean, St. Mary's College, Winona, Minnesota, published.—*Journal of Educational Research*, April, 1936 (Public School Publishing Co., Bloomington, Ill.).

Survey of Religious and Economic Home Conditions of Students Attending St. Norbert College.—Rev. A. M. Keefe, St. Norbert College, February 1, 1937.

A Program of Remedial Instruction in Reading for College Freshmen.—J. M. McCallister, Herzl City Jr. College, 3711 Douglas Blvd., Chicago, Ill., June 1938.

Effects of Remedial Instruction in Reading upon Freshman Students' Reading Ability.—Sister M. Chrysologa, Sister M. Elaine, Notre Dame Jr. College, St. Louis, Mo., February 1936.

Investigation of Study Habits of Freshmen (1935–1936).—Sister M. Reginald, Notre Dame Jr. College, St. Louis, Mo., March 1936.

A Follow-Up Study of Freshmen Who Entered the University of Minnesota, Fall Quarter, 1932.—T. E. Pettengill, University of Minnesota, January 1938.

Scholastic Rating of N.Y.A. Workers as Compared with Their Own High School Record and with Other Members of Their College Class.—Estelle Dougherty, Sterling College, March, 1937, in mimeographed form.

Surveys and Classifications

A Study of Marking Systems.—L. S. McGraw, Concord State Teachers College.

Non-Professional Degrees Issued by Teachers Colleges.—S. M. Uhlken, Nebraska State Normal College.

Uniform Entrance Blank.—John A. Chase, Jr., University of South Carolina, December, 1936.

The Problem of College Admission with Special Reference to the Uniform Entrance Blank.—M. E. Gladfelter, Temple University, with Committee of Penna. Association of Secondary School Principals.

Geographical Study of Students Attending Michigan Colleges and Universities.—W. W. Whitehouse, Allison College, Summer, 1937; published—State Department of Public Instruction.

A Study of the Contents, Format and Typography Used in the College Catalogs of the Middle States and Maryland, Including Student Evaluations of the Importance of the Various Features of the Catalog.—Committee of the Registrars Association of the Middle States and Maryland, M. E. Gladfelter, Temple University, Chairman, September, 1937.

State-Wide Survey to Find Percentage of Denominational Attendance at Denominational Institutions in Kansas.—Estelle Dougherty, Sterling College, January, 1937, in mimeographed form.

Trends in the Marking System at the University of Minnesota, 1869–1936. —T. E. Pettengill, University of Minnesota, completed, in mimeographed form.

Distribution of Marks of Southwestern College Instructors over a Three-Year Period.—W. J. Poundstone, Southwestern College, Winfield, Kansas, November 1, 1936.

Curricular

Articulation between High School and College Curricula in South Carolina. —C. A. Kaufmann, Newberry College, March 27, 1937; published—State Paper.

The Junior College Curricula in North Central Teachers Colleges with Special Reference to the Recognition of the General Education Function.—Roy W. Bixler, University of Chicago, April 1, 1937.

Four-Year Curriculum for Preparation of Elementary Teachers.—Indiana State Department, Harry E. Elder, Indiana State Teachers College (member of committee of four), April 1, 1937.

Quality-Point Ratios.—Sister Mary Vivian, S. L., Chairman (Committee on Curriculum, Catalog, etc.), Loretto Heights College, September, 1937.

Analysis of Course Enrollments to Determine Function Each Course Actually Is Serving.—Clifford L. Constance, University of Oregon, June, 1937.

Classical Curriculum in the Liberal Arts College.—W. D. Ryan, Regis College, Denver, Colo., Summer, 1937.

Student Hours of Instruction in All Lutheran Colleges of the United States, for the Year 1935–36.—J. M. Bly, St. Olaf College, completed.

Analysis of Course Enrollments by Class and Major.—Clifford L. Constance, University of Oregon, June, 1937.

Testing Programs

A Ten-Year Study of Iowa Placement Examinations.—H. H. Armsby, Missouri School of Mines and Metallurgy.

A Statewide Testing Program.—W. C. McCall, University of South Carolina, December, 1936.

An Independent Study Plan in Intermediate French. (Cooperation desired from other institutions using Scott Foresman French Progress Tests.)—Sister M. Eugenia, Notre Dame Jr. College, St. Louis, Mo.

General

A Topical Index of the Proceedings and the Bulletin of the American Association of Collegiate Registrars.—W. C. Smyser, Miami University, September 1, 1936.

The Use of Machines and Equipment for Sorting, Tabulating, Listing, etc. —E. J. Grant, Columbia University.

Status of the Work of the Registrar in the Junior Colleges of the United States.—A Samuel Wallgren, North Park College, Chicago, Ill., August, 1936, published—*Junior College Journal*, issues of March and April, 1937.

Student Mortality—a Cooperative Study of Mortality in Universities undertaken by the U. S. Office of Education, and financed under the Emer-

gency Relief Appropriation Act of 1935. John H. McNeely, Specialist in Higher Education, coordinator. Participating in the study: John V. McQuitty, University of Florida; A. C. Nelson, University of Denver; Fred E. Aden, University of Colorado.

FROM THE EDUCATIONAL NEWS REEL

The April, 1937, meeting of the American Association of Collegiate Registrars will be the first to convene west of the Mississippi River since 1929. In that year, 696 delegates went to Seattle to establish a new attendance record. The development of strong regional organizations, the large attendance at the conventions held during the last few years, and the central location of Kansas City predict a large registration for the twenty-fifth convention, April 13, 14, 15.

Doubtless many registrars will want to visit institutions and places of historical interest in and around Kansas City. From Registrar Florence I. McGahey, of the University of Nebraska, comes an invitation to all who attend the convention to stop at Lincoln for a visit to the University of Nebraska and the beautiful State Capitol.

With this issue the *Bulletin of the American Association of Collegiate Registrars* becomes a member of the Educational Press Association of America. This Association, organized in 1895, admits to membership only those publications issued for the promotion of public education, and publishes a year book in which is contained a classified list of periodicals.

On February 15–19, the University of Florida conducted a Seminar on Significant Trends in General Education. The faculty of the Seminar included President C. S. Boucher, University of West Virginia; Chancellor H. W. Chase, New York University; Assistant Dean Alvin C. Eurich, University of Minnesota; Librarian B. Lamar Johnson, Stephens College, Columbia, Missouri; and Professor Charles H. Judd, University of Chicago.

The publication entitled "Minnesota Studies in Articulation" has just come from the press. This publication is issued by the Committee on Educational Research, and includes studies which deal with the problems of articulation, prediction, and achievement. The initiation of these studies was made possible by a grant from the Carnegie Corporation.

In addition to the tables on honor point ratios presented by Mr. Underwood in this ussue, the editor has been informed by H. W. Chandler, Registrar of the University of Florida, and Robert L. Williams, the assistant Registrar of the University of Michigan, that photostatic copies of tables devised by these institutions can be obtained at cost.

After June, 1937, the Registrar's Office of Western Kentucky State Teachers College will be located in the new $561,000.00 classroom building. Visible record equipment will be installed in the Registrar's Office beginning with the fall semester, 1937.

From December 9, 1936 through Commencement, June 14, 1937, DePauw University will be celebrating its centennial. DePauw-Greencastle Day was observed on December 9, 1936, a centennial broadcast took place on January 11, a centennial conference on preaching was held January 13–15, and President Clyde E. Wildman was inaugurated on March 10. The centennial commencement will be held June 11–14.

The Illinois Association of Collegiate Registrars and the Federation of Illinois Colleges are co-operating in a move to bring about the passage of a bill creating better control of private institutions in the state. Enoch C. Dyrness is Chairman of the committee of the Registrars' organization.

Temple University will hold the Third Annual Career Conference for Secondary School students on Saturday, April 10. Group conferences in twenty-seven different fields, for which collegiate training is a prerequisite, are conducted by leaders from industrial, commercial, and professional fields. At this annual meeting, the University is host to 1,400 secondary school students who attend the various meetings of the day.

At the Annual School Men's Week Program of the University of Pennsylvania held on March 10–13, Registrars Ira M. Smith, of the University of Michigan, and Millard E. Gladfelter, of Temple University, presented papers at a conference on school and college relations. The discussions were about the problems concerned with the admission of students to college and their guidance after admission.

Dr. J. T. Link, member of the Faculty and Registrar of Concordia State Teachers College, Seward, Nebraska, died December 20. Dr. Link had been Registrar at Concordia College for the past 25 years, and was known as a master teacher specializing in earth sciences.

Mrs. Helen Hayden Stanley, Recorder in the Registrar's Office, at the University of Kentucky, died on February 12, after a brief illness. Mrs. Stanley had been a member of the Registrar's staff of the University of Kentucky since October, 1919. She was made University Recorder in 1925, and held this position at the time of her death.

On February 1, Dr. Thomas N. Barrows assumed office as the tenth President of Lawrence College. John S. Millis, Professor of Physics will succeed Mr. Barrows, as Dean.

Dr. Levering Tyson, Executive Director of the National Advisory Council on Radio, and formerly Director of Extension for Columbia University, has been appointed President of Muhlenberg College at Allentown, Pennsylvania. He will assume office in the fall.

Miss Norma C. Albrecht was appointed Assistant Registrar at Peru State Teachers College, and began her work in September, 1936. Miss Albrecht was formerly Registrar and Instructor in Commerce at Colorado Woman's College.

At a recent meeting of the Pacific coast association of Collegiate Registrars in San Francisco, Registrar Newhouse, of the University of Washington, and Frank T. Bernard, Registrar of the State College of Washington decided to exchange a member of each of their staffs for a short time.

As a result, Miss Jimmie Williams, Assistant Registrar of the State College, is spending three weeks in the office at the University of Washington, and Miss Leah Pepper, Recording Assistant of the University, will spend an equal amount of time in Pullman from February 1–20.

Stanford University also impressed with this idea, has sent an assistant to the University of Washington with Miss Williams, and one of the University staff has gone to Stanford. Miss Williams has been connected with the Registrar's Office here since 1921.

BOOK REVIEWS

Teacher Education:—The first normal school was established at Lexington, Massachusetts, just one hundred years ago. During the century teacher education has passed through several phases of development. The normal schools have raised the level of their instruction, have increased the length of their curricula, and have become degree granting institutions. Furthermore, nearly all of the liberal arts colleges and the universities have become, to a large extent, teacher-training institutions, this function overlapping and duplicating the efforts of the teachers colleges and thereby raising many controversial issues. The need of clarification was emphasized in the discussions of the National Education Association meeting of 1915. The desirability of a survey was discussed and a committee to investigate its possibility was appointed, but it was fifteen years later when the Seventy-first Congress authorized a survey of the education of teachers of a nation-wide scope and appropriated $180,000 to carry it out. The report[1] of the Survey is now complete in six volumes of some 1,800 pages.

The Survey was conducted by E. S. Evenden of Teachers College, Columbia University, Associate Director, with a staff of forty-five members, special advisers, research assistants, and associate members, assisted by a Board of Consultants of twelve experts and a Professional Advisory Committee of forty-seven representatives of interested organizations.

The scope of the Survey is indicated by the titles of the volumes, as follows:

I. *Selected Bibliography* (annotated, 1,297 titles).
II. *Teacher Personnel in the United States.*
III. *Teacher Education Curricula.*
IV. *Education of Negro Teachers.*
V. *Special Survey Studies.*
VI. *Summary and Interpretation.*

The Survey was conducted with five major purposes, (1) to present a nation-wide picture of present conditions and practices in the education of teachers, (2) to discover and clarify problems and controversial issues, (3) to indicate trends, (4) to solve problems or

[1] *National Survey of the Education of Teachers.* Volumes I, II, III, IV, V, and VI. Superintendent of Documents, Washington, D. C.

proposals for improving practices, and (5) to make available, as early as possible, significant data that could be used in the formulation of educational programs.

The *Summary and Interpretation*, which is written by Evenden, discusses three of the larger problems in the education of teachers as revealed by the Survey, and presents a composite judgment of the consultants, directors, and specialists concerning the best solutions. The problems chosen as the most pressing are (1) how to raise the level of education of American teachers, (2) how to make their preparation more distinctly professional, and (3) how to bring about a more desirable adjustment between demand and supply.

Stated very briefly, the answers are:

1. Define good teaching in various types of positions and develop more accurate means of measuring it.
2. Make educational leaders aware of the state's responsibility for developing a long-term plan for the education of its teachers.
3. Obtain greater uniformity in permanent records about the education and employment of teachers.
4. Remove at once the professional demoralizing lack of adjustment between supply and demand.
5. Persuade each state to establish dates by which all teachers in service whose preparation is below the accepted standard for the state would be expected to meet the current standards.
6. Regulate the supply of prospective teachers by standards through selective admission of students to curricula for teachers.
7. Provide large numbers of teachers better and more specifically prepared for rural schools.
8. Provide for more and better prepared teachers for Negro schools in the states in which separate schools are maintained for Negroes.
9. Develop greater interest in the distinctly professional elements in the education of teachers.
10. Make sure that all prospective teachers possess at least the "safety minimum" amount of teaching skill before being certificated.
11. Adjust curricula for teachers to the work of the junior colleges, especially in those states in which the minimum

standard of preparation does not exceed the junior college level.

12. Promote the realization that the schools will be required to take a heavier responsibility for the enjoyable and constructive use of increased amounts of leisure.
13. Persuade states that have not already done so to adopt systems of restricted certification which will indicate very specifically the kinds of positions for which the teacher is prepared and which will restrict the teacher's employment to those positions.
14. Develop and maintain in each state lists of institutions approved for the preparation of teachers for each type of position for which the state issues certificates.
15. Adopt standards and regulations which will make sure that the courses in all curricula for teachers are taught by staff members who are adequately prepared—scholastically and professionally—and who are genuinely interested in education and in the education of teachers.
16. Raise standards for the preparation of teachers and control the supply of new teachers by obtaining from all institutions on the approved list—public and private—co-operation in developing the program and in carrying out its provisions.
17. Improve the community status—prestige—of the teacher.
18. Develop upon a nation-wide basis such an understanding of the significance of education that ways and means will be found and approved for restoring recent educational losses and for adding new educational services.
19. Procure in a majority of states the legislation or the constitutional amendments essential to the reorganization of the state departments of education.
20. Each state must maintain a continuing survey of its teaching personnel in order to meet its teacher-training obligations wisely.

The Survey has given us, in these twenty problems, an outline of a long-time national program for the improvement of teacher education, which will unquestionably serve as a tremendous stimulation of further study of teacher education by institutions, states, and regional and national agencies. Its immediate effect, however, depends upon the response of institutions and of states to the recom-

mendations, and these smaller units will not be so quick to respond, because a national survey does not describe typical situations.

In the judgment of this reader, the study of the curriculum is the weakest part of the Survey. It was considered primarily in terms of patterns. It is not possible to determine, for example, by reading the volume on the curriculum what the present picture is and what the trends are with reference to a limitation of professional courses to the senior college years. General education is not considered perpendicularly. It seems that the Survey has failed to give adequate consideration to the junior college movement and its relation to teacher education. The small consideration is especially noticeable in view of the recommendation that junior colleges not train teachers and the fact that nearly all of the teachers colleges are utilizing their own junior colleges for that purpose.

The data were collected in the early part of the depression and for that reason are not representative of the normal status of all the problems studied. For example, the problem of supply and demand has undergone considerable change since 1930–1931. However, the Survey has made a distinct contribution in the location of problems and in the stimulation of further study.

IN THE JOURNALS

"Conflict on the Campus," J. C. Long. *Scribner's Magazine*, Vol. CI, No. 3, March 1937, p. 43.

This writer claims that there is an unsettled conflict on the campus, spreading to disturbances everywhere. This is observed through the expressions of various educators, differences in schools of thought and is especially noticeable in the preparation found among the graduates of our colleges and universities. The causes of this confusion are listed as being the decline of authoritative teaching which gave way to the elective system, the lowering of requirements for admission, the demands of graduate schools, increased size of schools and the emphasis on vocational training. The author suggests certain policies that should be followed including a basis for the B.A. degree. The B.A. degree should include a thorough grounding in an ancient language, English literature, including grammar, the history of the world with emphasis on American institutions, a science and an introduction to philosophy. Institutions should re-examine their policies as is being done by such schools as Union, Williams, Swarthmore and others.

Cultivating "Will-ful" Giving, Archie M. Palmer. *Journal of Higher Education*, Vol. VIII, No. 2, February 1937.

Support of institution through bequests may be one of the solutions for financial problems of colleges and universities, judging from this summary of the plan followed at Cornell and several other schools. The writer outlines the programs that are followed in a number of institutions.

"The Effect of FERA Employment Upon College Grades," *School and Society*, Vol. 45, No. 1149, January 2, 1937, p. 24.

The University of Buffalo made a careful, controlled, study of 64 students employed through FERA in 1934–35, to determine effect of this employment on the college record. The conclusion seemed to indicate that this work did not handicap the students in their collegiate success.

"Doctors' Theses under way in Education, 1936–37," Carter V. Good. *Journal of Educational Research*, Vol. XXX, No. 5, January 1937, p. 370.

This article includes a list of 549 doctors' theses subjects in education not previously reported. The author has compiled similar lists since 1934 that may be found in the January issue of this bulletin for the respective years.

"Freshman Orientation at Alabama College," Minnie L. Steckel, *School and Society*, Vol. 44, No. 1144, November 28, 1936, p. 713.

An interesting review of the participation of upperclassmen in welcoming new students to the institution.

"Status of the Junior College in the United States, 1936–37," Walter Crosby Eells, *School and Society*, Vol. 45, No. 1153, January 30, 1937, p. 166.

The writer has summarized a number of facts concerning junior colleges for the past year. The report covers 528 such institutions and deals with such matters as growth from 1928–1937, enrolments, source of support, distribution by states, and number of instructors. Mention is made that detailed information for each of the 528 schools may be found in the "Directory of the Junior College, 1937" by Dr. Doak S. Campbell, Peabody College, Secretary of the American Association of Junior Colleges and published in the *Junior College Journal* for January 1937.

"The Administrator and His Time," Raymond M. Hughes, *The Educational Record*, Vol. XVIII, No. 1, January 1937, p. 48.

A former college president presents his views on methods that may be followed to conserve time.

"College President," John R. Tunis, *Harper's Magazine*, No. 1041, February 1937, p. 259.

This is an article dealing with a hypothetical case wherein a college president is elected who strives to discharge his duties under the idealistic requirements set up by the nominating committee. A day's work is outlined with results of conferences with the superintendent of buildings, a professor, a member of the board of regents, a meeting of the council to consider changes in educational policies, a conference with other presidents on the athletic situation and a call from the governor concerning alleged communistic tendencies in the university. His methods of dealing with these and other problems result in his removal from office. The article concludes with a summary of conversations wherein various people air their opinions as to the cause of his removal from office.

"Income from Endowments," Walter Crosby Eells, *Journal of Higher Education*, Vol. VII, No. 9, December 1936, p. 475.

This is a summary of the income from endowments received by privately controlled colleges and universities. The study includes twenty institutions whose productive funds are above $10,000,000 each and is a comparison of income from 1919–20 to 1933–34 inclusive.

REGIONAL ASSOCIATIONS OF THE AMERICAN ASSOCIATION OF COLLEGIATE REGISTRARS

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EDITOR'S NOTE: All corrections and additions and all reports from regional meetings should be submitted to Regional Editor Enoch C. Dyrness, Wheaton College, Wheaton, Illinois.

CALENDAR OF COMING EDUCATIONAL EVENTS

April 1 to June 30, 1937

April	2, 1937	South Carolina Association of Collegiate Registrars, The Citadel, Charleston, South Carolina
April	7–10, 1937	North Central Association of Colleges and Secondary Schools, Chicago, Illinois
April	13–15, 1937	American Association of Collegiate Registrars, Kansas City, Missouri
April	13–15, 1937	Canadian Board of Christian Education, Toronto, Ontario, Canada
April	14–16, 1937	Kentucky Educational Association, Louisville, Kentucky
April	17, 1937	Western Pennsylvania Industrial Arts Conference, California, Pennsylvania
April	17, 1937	Virginia Association of Collegiate Registrars, Randolph-Macon Woman's College, Lynchburg, Virginia
April	21–24, 1937	American Physical Education Association, New York City
April	23–24, 1937	Pennsylvania Forensic and Music League, Tenth Annual Final State Contest, Altoona, Pennsylvania
May	15, 1937	Minnesota Association of College Registrars, Bemidji Teachers College, Bemidji, Minnesota
May 31–June 1, 1937		Canadian Universities Conference, Kingston, Ontario, Canada
June 27–July 1, 1937		National Education Association Convention, Detroit, Michigan